

# Maintenance

<b>Engine Compartment</b> .....	7-3	<b>Brake Discs, Pads, Calipers and Rotors</b> .....	7-18
<b>Maintenance Services</b> .....	7-6	<b>Exhaust Pipe and Muffler</b> .....	7-18
Owner's Responsibility .....	7-6	<b>Suspension Mounting Bolts</b> .....	7-18
Owner Maintenance Precautions .....	7-6	<b>Steering Gear Box, Linkage &amp;</b>	
<b>Owner Maintenance</b> .....	7-7	<b>Boots/Lower Arm Ball Joint</b> .....	7-18
Owner Maintenance Schedule .....	7-8	<b>Drive Shafts and Boots</b> .....	7-18
<b>Scheduled Maintenance Services</b> .....	7-9	<b>Air Conditioning Refrigerant</b> .....	7-18
Normal Maintenance Schedule .....	7-10	<b>Engine Oil</b> .....	7-19
Maintenance Under Severe Usage Conditions .....	7-14	Checking the Engine Oil Level .....	7-19
<b>Explanation of Scheduled Maintenance Items</b> ..	7-16	Checking the Engine Oil and Filter .....	7-21
<b>Engine Oil and Filter</b> .....	7-16	<b>Engine Coolant</b> .....	7-22
<b>Drive Belts</b> .....	7-16	Checking the Engine Coolant Level .....	7-22
<b>Fuel Filter</b> .....	7-16	Changing Engine Coolant .....	7-24
<b>Fuel Lines, Fuel Hoses and Connections</b> .....	7-16	<b>Brake Fluid</b> .....	7-25
<b>Vapor Hose and Fuel Filler Cap</b> .....	7-16	Checking the Brake Fluid Level .....	7-25
<b>Air Cleaner Filter</b> .....	7-16	<b>Washer Fluid</b> .....	7-26
<b>Spark Plugs</b> .....	7-16	Checking the Washer Fluid Level .....	7-26
<b>Valve Clearance</b> .....	7-17	<b>Parking Brake</b> .....	7-26
<b>Cooling System</b> .....	7-17	Checking the Parking Brake .....	7-26
<b>Engine Coolant</b> .....	7-17	<b>Air Cleaner</b> .....	7-27
<b>Automatic Transmission Fluid</b> .....	7-17	Filter Replacement .....	7-27
<b>Brake hoses and Lines</b> .....	7-18	<b>Climate Control Air Filter</b> .....	7-29
<b>Brake Fluid</b> .....	7-18	Filter Inspection .....	7-29
<b>Parking Brake</b> .....	7-18		

<b>Wiper Blades</b> .....	7-31
Blade Inspection.....	7-31
Blade Replacement.....	7-31
<b>Battery</b> .....	7-33
For Best Battery Service.....	7-34
Battery Recharging.....	7-34
Reset features.....	7-36
<b>Tires and Wheels</b> .....	7-37
Tire Care.....	7-37
Recommended Cold Tire Inflation Pressures.....	7-38
Check Tire Inflation Pressure.....	7-39
Tire Rotation.....	7-40
Wheel Alignment and Tire Balance.....	7-41
Tire Replacement.....	7-41
Wheel Replacement.....	7-42
Tire Traction.....	7-42
Tire Maintenance.....	7-43
Tire Sidewall Labeling.....	7-43
Tire Terminology and Definitions.....	7-47
All Season Tires.....	7-50
Summer Tires.....	7-50
Snow Tires.....	7-50
Radial-Ply Tires.....	7-51
Low Aspect Ratio Tires.....	7-51
<b>Fuses</b> .....	7-53
Instrument Panel Fuse Replacement.....	7-54
Engine Compartment Panel Fuse Replacement.....	7-56
Fuse/Relay Panel Description.....	7-58
<b>Light Bulbs</b> .....	7-66
Headlamp, Position Lamp, Turn Signal Lamp and Side Marker Light Bulb Replacement.....	7-67
Side Repeater Lamp Replacement.....	7-70
Rear Combination Light Bulb Replacement.....	7-70
High Mounted Stop Lamp.....	7-72
License Plate Light Bulb Replacement.....	7-73
Interior Light Bulb Replacement.....	7-73
<b>Appearance Care</b> .....	7-75
Exterior Care.....	7-75
Interior Care.....	7-80
<b>Emission Control System</b> .....	7-83
Crankcase Emission Control System.....	7-83
Evaporative Emission Control System Including Onboard Refueling Vapor Recovery (ORVR).....	7-83
Exhaust Emission Control System.....	7-84

## ENGINE COMPARTMENT

### ■ 1.6 T-GDI

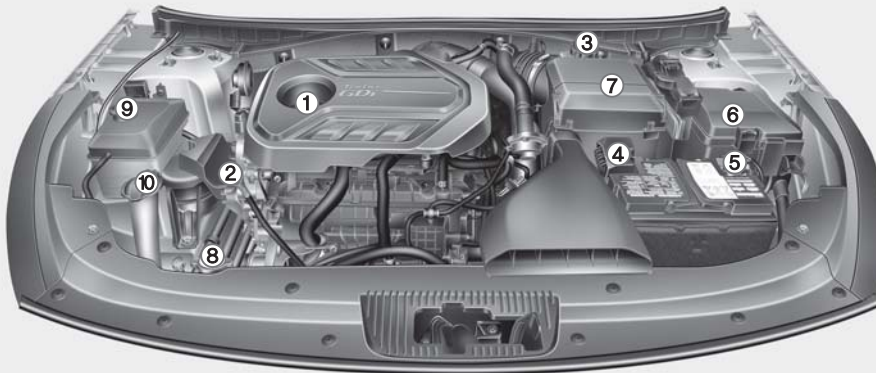


1. Engine oil filler cap
2. Engine oil dipstick
3. Brake fluid reservoir
4. Positive battery terminal
5. Negative battery terminal
6. Fuse box
7. Air cleaner
8. Radiator cap
9. Engine coolant reservoir
10. Windshield washer fluid reservoir

The actual engine compartment in the vehicle may differ from the illustration.

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### ■ 2.0 T-GDI

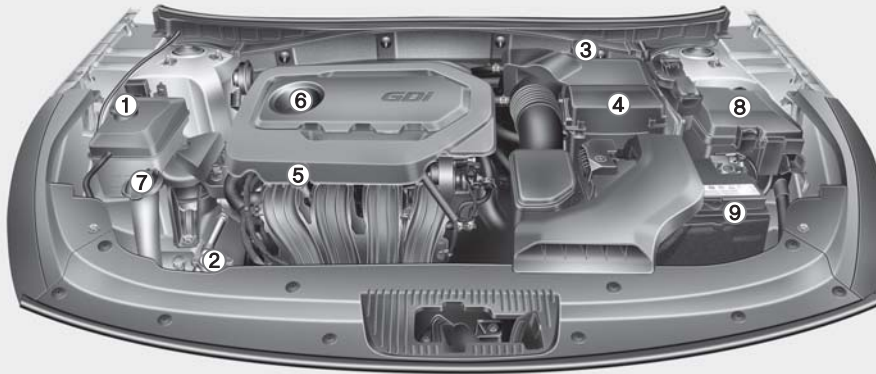


1. Engine oil filler cap
2. Engine oil dipstick
3. Brake fluid reservoir
4. Positive battery terminal
5. Negative battery terminal
6. Fuse box
7. Air cleaner
8. Radiator cap
9. Engine coolant reservoir
10. Windshield washer fluid reservoir

**The actual engine compartment in the vehicle may differ from the illustration.**

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■ 2.4 GDI



1. Engine coolant reservoir
2. Radiator cap
3. Brake fluid reservoir
4. Air cleaner
5. Engine oil dipstick
6. Engine oil filler cap
7. Windshield washer fluid reservoir
8. Fuse box
9. Battery

**The actual engine compartment in the vehicle may differ from the illustration.**

### MAINTENANCE SERVICES

You should exercise the utmost care to prevent damage to your vehicle and injury to yourself whenever performing any maintenance or inspection procedures.

We recommend you have your vehicle maintained and repaired by an authorized HYUNDAI dealer. An authorized HYUNDAI dealer meets HYUNDAI's high service quality standards and receives technical support from HYUNDAI in order to provide you with a high level of service satisfaction.

#### Owner's Responsibility

Maintenance service and record retention are the owner's responsibility.

You should retain documents that show proper maintenance has been performed on your vehicle in accordance with the scheduled maintenance service charts shown on the following pages. You need this information to establish your compliance with the servicing and maintenance requirements of your vehicle warranties.

Detailed warranty information is provided in your Service Passport.

Repairs and adjustments required as a result of improper maintenance or a lack of required maintenance are not covered.

#### Owner Maintenance Precautions

Inadequate, incomplete or insufficient servicing may result in operational problems with your vehicle that could lead to vehicle damage, an accident, or personal injury. This chapter provides instructions only for the maintenance items that are easy to perform. Several procedures can be done only by an authorized HYUNDAI dealer with special tools.

Your vehicle should not be modified in any way. Such modifications may adversely affect the performance, safety or durability of your vehicle and may, in addition, violate conditions of the limited warranties covering the vehicle.

#### **NOTICE**

**Improper owner maintenance during the warranty period may affect warranty coverage. For details, read the separate Service Passport provided with the vehicle. If you're unsure about any service or maintenance procedure, have it done by an authorized HYUNDAI dealer.**

## OWNER MAINTENANCE

### WARNING

Performing maintenance work on a vehicle can be dangerous. If you lack sufficient knowledge and experience or the proper tools and equipment to do the work, have it done by an authorized HYUNDAI dealer. ALWAYS follow these precautions for performing maintenance work:

- Park your vehicle on level ground, move the shift lever into the P (Park, for automatic transmission vehicle) position, apply the parking brake, place the ignition switch in the LOCK/OFF position.
- Block the tires (front and back) to prevent the vehicle from moving.

Remove loose clothing or jewelry that can become entangled in moving parts.

(Continued)

(Continued)

- If you must run the engine during maintenance, do so out doors or in an area with plenty of ventilation.
- Keep flames, sparks, or smoking materials away from the battery and fuel-related parts.

The following lists are vehicle checks and inspections that should be performed by the owner or an authorized HYUNDAI dealer at the frequencies indicated to help ensure safe, dependable operation of your vehicle.

Any adverse conditions should be brought to the attention of your dealer as soon as possible.

These Owner Maintenance vehicle checks are generally not covered by warranties and you may be charged for labor, parts and lubricants used.

### Owner Maintenance Schedule

#### ***When you stop for fuel:***

- Check the engine oil level.
- Check coolant level in the engine coolant reservoir.
- Check the windshield washer fluid level.
- Check for low or under-inflated tires.

#### **WARNING**

**Be careful when checking your engine coolant level when the engine is hot. This may result in coolant being blown out of the opening and cause serious burns and other injuries.**

#### ***While operating your vehicle:***

- Note any changes in the sound of the exhaust or any smell of exhaust fumes in the vehicle.
- Check for vibrations in the steering wheel. Notice if there is any increased steering effort or looseness in the steering wheel, or change in its straight-ahead position.
- Notice if your vehicle constantly turns slightly or "pulls" to one side when traveling on smooth, level road.
- When stopping, listen and check for unusual sounds, pulling to one side, increased brake pedal travel or "hard-to-push" brake pedal.
- If any slipping or changes in the operation of your transmission occurs, check the transmission fluid level.
- Check the automatic transmission P (Park) function.
- Check the parking brake.
- Check for fluid leaks under your vehicle (water dripping from the air conditioning system during or after use is normal).

#### ***At least monthly:***

- Check coolant level in the engine coolant reservoir.
- Check the operation of all exterior lights, including the stoplights, turn signals and hazard warning flashers.
- Check the inflation pressures of all tires including the spare for tires that are worn, show uneven wear, or are damaged.
- Check for loose wheel lug nuts.

***At least twice a year:  
(i.e., every Spring and Fall)***

- Check radiator, heater and air conditioning hoses for leaks or damage.
- Check windshield washer spray and wiper operation. Clean wiper blades with clean cloth dampened with washer fluid.
- Check headlamp alignment.
- Check muffler, exhaust pipes, shields and clamps.
- Check the seat belts for wear and function.

***At least once a year:***

- Clean body and door drain holes.
- Lubricate door hinges and hood hinges.
- Lubricate door and hood locks and latches.
- Lubricate door rubber weather strips.
- Check the air conditioning system.
- Inspect and lubricate automatic transmission linkage and controls.
- Clean the battery and terminals.
- Check the brake fluid level.

## SCHEDULED MAINTENANCE SERVICES

Follow Normal Maintenance Schedule if the vehicle is usually operated where none of the following conditions apply. If any of the following conditions apply, you must follow the Maintenance Under Severe Usage Conditions.

- Repeated short distance driving.
- Driving in dusty conditions or sandy areas.
- Extensive use of brakes.
- Driving in areas where salt or other corrosive materials are used.
- Driving on rough or muddy roads.
- Driving in mountainous areas.
- Extended periods of idling or low speed operation.
- Driving for a prolonged period in cold temperatures and/or extremely humid climates.
- More than 50% driving in heavy city traffic during hot weather above 32°C (90°F).

For additional information or assistance see your authorized HYUNDAI dealer.

### Normal maintenance schedule

The following maintenance services must be performed to ensure good emission control and performance. Keep receipts for all vehicle emission services to protect your warranty. Where both kilometrage and time are shown, the frequency of service is determined by whichever occurs first.

R : Replace

I : Inspect and, after inspection, clean, adjust, repair or replace if necessary.

No.	Description	Kilometers X 1000	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	
		Months	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	
Emission control items																							
1	Engine oil and filter (2.4 GDI)	Replace every 12,000 km or 12 months																					
2	Engine oil and filter (1.6 / 2.0 T-GDI)	Replace every 10,000 km or 12 months																					
3	Fuel additives *1	Add every 12,000 km or 12 months																					
4	Fuel filter *2				I					I				I					I				I
5	Fuel line, fuel hoses and Connections				I					I				I					I				I
6	Vacuum hose	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I
7	Inter cooler, in/out hose, Air intake hose (T-GDI)	Inspect every 10,000 km																					

\*1 : If TOP TIER Detergent Gasoline is not available, one bottle of additive is recommended. Additives are available from your authorized HYUNDAI dealer along with information on how to use them. Do not mix other additives.

\*2 : Fuel filter & Fuel tank air filter are considered to be maintenance free but periodic inspection is recommended for this maintenance schedule depends on fuel quality. If there are some important safety matters like fuel flow restriction, surging, loss of power, hard starting problem etc, replace the fuel filter immediately regardless of maintenance schedule and consult an authorized HYUNDAI dealer for details.

## Normal maintenance schedule (CONT.)

R : Replace

I : Inspect and, after inspection, clean, adjust, repair or replace if necessary.

No.	Description	Kilometers X 1000	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	
		Months	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	
Emission control items																							
8	Vapor hose, fuel filler cap and fuel tank				I					I				I				I					I
9	Air cleaner filter	I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	R	I	I	I	I	I	R
10	Spark plugs (Iridium coated) (2.4 GDI)															R							
11	Spark plugs (Iridium coated) (1.6 / 2.0 T-GDI)						R							R							R		
12	Valve clearance <sup>*3</sup> (1.6 T-GDI engine)								I									I					
13	Fuel tank air filter <sup>*2</sup>				I					I				I				I					I

<sup>\*2</sup> : Fuel filter & Fuel tank air filter are considered to be maintenance free but periodic inspection is recommended for this maintenance schedule depends on fuel quality. If there are some important safety matters like fuel flow restriction, surging, loss of power, hard starting problem etc, replace the fuel filter immediately regardless of maintenance schedule and consult an authorized HYUNDAI dealer for details.

<sup>\*3</sup> : Inspect for excessive tappet noise and/or engine vibration and adjust if necessary. A qualified technician should perform the operation.

## Normal maintenance schedule (CONT.)

R : Replace

I : Inspect and, after Inspection, clean, adjust, repair or replace if necessary.

No.	Description	Kilometers X 1000	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240	
		Months	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120	
General items																							
1	Drive belt *1	At first, inspect the drive belt at 96,000 km or 72 months; after that, inspect it every 24,000 km or 24 months																					
2	Coolant *2	At first, replace the coolant at 96,000 km or 60 months; after that, replace it every 48,000 km or 24 months																					
3	Automatic transmission fluid *3	No check, No service required																					
4	Ecoshift dual clutch transmission fluid (if equipped)									I									I				
5	Brake fluid				I					I				I					I				I
6	Brake hose/lines & connections (Including booster)		I		I		I		I		I		I		I		I		I		I		I
7	Front disc brake/pads, calipers		I		I		I		I		I		I		I		I		I		I		I
8	Rear brake disc/pads		I		I		I		I		I		I		I		I		I		I		I
9	Parking brake				I					I				I					I				I

\*1 : The drive belt should be replaced when cracks occur or tension is reduced excessively.

\*2 : When adding coolant, use only deionized water or soft water for your vehicle and never mix hard water in the coolant filled at the factory. An improper coolant mixture can result in serious malfunction or engine damage.

\*3 : Use only the specified automatic transmission fluid. (Refer to “Recommended lubricants and capacities” in chapter 8 or the label in the engine room.)

## Normal maintenance schedule (CONT.)

R : Replace

I : Inspect and, after inspection, clean, adjust, repair or replace if necessary.

No.	Description	Kilometers X 1000	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	240
		Months	6	12	18	24	30	36	42	48	54	60	66	72	78	84	90	96	102	108	114	120
General items																						
10	Exhaust pipe and muffler		I		I		I		I		I		I		I		I		I		I	
11	Suspension mounting bolts		I		I		I		I		I		I		I		I		I		I	
12	Steering gear box, linkage & boots/lower arm ball joint, upper arm ball joint		I		I		I		I		I		I		I		I		I		I	
13	Drive shafts and boots		I		I		I		I		I		I		I		I		I		I	
14	Air conditioning refrigerant		I		I		I		I		I		I		I		I		I		I	
15	Climate control air filter (for evaporator and blower unit)		R		R		R		R		R		R		R		R		R		R	
16	Rotate tires	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I	I

### Maintenance under severe usage conditions

The following items must be serviced more frequently on cars normally used under severe driving conditions. Refer to the chart below for the appropriate maintenance intervals.

R : Replace    I : Inspect and, after inspection, clean, adjust, repair or replace if necessary

Maintenance item	Maintenance operation	Maintenance Intervals	Driving condition
Engine oil and filter (2.4 GDI)	R	Every 6,000 km or 6 months	A, B, C, D, E, F, G, H, I, K
Engine oil and filter (1.6 / 2.0 T-GDI)	R	Every 5,000 km or 6 months	A, B, C, D, E, F, G, H, I, J, K
Air cleaner filter	I	More frequently	C, E
Spark plugs	R	More frequently	B, H
Automatic transmission fluid	R	Every 100,000 km	A, C, E, F, G, I
Dual clutch transmission fluid	R	Every 120,000 km	C, D, E, F, G, H, I, J
Front disc brake/pads, calipers	I	More frequently	C, D, G, H
Rear brake disc/pads	I	More frequently	C, D, G, F
Parking brake	I	More frequently	C, D, G, H
Steering gear box, linkage & boots/lower arm ball joint, upper arm ball joint	I	More frequently	C, D, E, F, G, H, I
Suspension mounting bolts	I	More frequently	C, D, E, F, G, H, I
Drive shafts and boots	I	Every 12,000 km or 6 months	C, D, E, F, G, H, I, J

Maintenance item	Maintenance operation	Maintenance Intervals	Driving condition
Climate control air filter (for evaporator and blower unit)	R	More frequently	C, E

### Severe driving conditions

- A - Repeatedly driving short distance of less than 8 km (5 miles) in normal temperature or less than 16 km (10 miles) in freezing temperature
- B - Extensive engine idling or low speed driving for long distances
- C - Driving on rough, dusty, muddy, unpaved, graveled or salt-spread roads
- D - Driving in areas using salt or other corrosive materials or in very cold weather
- E - Driving in sandy areas
- F - Driving in heavy traffic area over 32°C (90°F)
- G - Driving on uphill, downhill, or mountain road
- H - Towing a Trailer, or using a camper, or roof rack
- I - Driving as a patrol car, taxi, other commercial use or vehicle towing
- J - Driving over 170 km/h (106 mph)
- K - Frequently driving in stop-and-go conditions

### EXPLANATION OF SCHEDULED MAINTENANCE ITEMS

#### Engine Oil and Filter

The engine oil and filter should be changed at the intervals specified in the maintenance schedule. If the car is being driven in severe conditions, more frequent oil and filter changes are required.

#### Drive Belts

Inspect all drive belts for evidence of cuts, cracks, excessive wear or oil saturation and replace if necessary. Drive belts should be checked periodically for proper tension and adjusted as necessary.

#### Fuel Filter

A clogged filter can limit the speed at which the vehicle may be driven, damage the emission system and cause multiple issues such as hard starting. If an excessive amount of foreign matter accumulates in the fuel tank, the filter may require replacement more frequently. After installing a new filter, run the engine for several minutes, and check for leaks at the connections. Fuel filters should be installed by an authorized HYUNDAI dealer.

#### Fuel Lines, Fuel Hoses and Connections

Check the fuel lines, fuel hoses and connections for leakage and damage. Have an authorized HYUNDAI dealer replace any damaged or leaking parts immediately.

#### Vapor Hose and Fuel Filler Cap

The vapor hose and fuel filler cap should be inspected at those intervals specified in the maintenance schedule. Make sure a new vapor hose or fuel filler cap is correctly replaced.

#### Air Cleaner Filter

A genuine HYUNDAI air cleaner filter is recommended when the filter is replaced.

#### Spark Plugs

Make sure to install new spark plugs of the correct heat range.

### Valve Clearance (if equipped)

Inspect for excessive valve noise and/or engine vibration and adjust if necessary. Have an authorized HYUNDAI dealer perform the operation.

### Cooling System

Check cooling system components, such as radiator, coolant reservoir, hoses and connections for leakage and damage. Replace any damaged parts.

### Engine Coolant

The coolant should be changed at the intervals specified in the maintenance schedule.

### Automatic Transmission Fluid

Automatic transmission fluid should not be checked under normal usage conditions. But in severe conditions, the fluid should be changed at an authorized HYUNDAI dealer in accordance to the scheduled maintenance at the beginning of this chapter.

#### NOTICE

**Automatic transmission fluid color is basically red.**

**As the vehicle is driven, the automatic transmission fluid will begin to look darker. This is a normal condition and you should not judge the need to replace the fluid based upon the changed color.**



#### CAUTION

**The use of a non-specified fluid could result in transmission malfunction and failure. Use only the specified automatic transmission fluid (refer to "Recommended Lubricants and Capacities" in chapter 8).**

### Brake Hoses and Lines

Visually check for proper installation, chafing, cracks, deterioration and any leakage. Replace any deteriorated or damaged parts immediately.

### Brake Fluid

Check brake fluid level in the brake fluid reservoir. The level should be between the MIN and the MAX marks on the side of the reservoir. Use only hydraulic brake fluid conforming to DOT 3 or DOT 4 specification.

### Parking Brake

Inspect the parking brake system including the parking brake pedal and cables.

### Brake Discs, Pads, Calipers and Rotors

Check the pads for excessive wear, discs for run out and wear, and calipers for fluid leakage.

### Exhaust Pipe and Muffler

Visually inspect the exhaust pipes, muffler and hangers for cracks, deterioration, or damage. Start the engine and listen carefully for any exhaust gas leakage. Tighten connections or replace parts as necessary.

### Suspension Mounting Bolts

Check the suspension connections for looseness or damage. Retighten to the specified torque.

### Steering Gear Box, Linkage & Boots/Lower Arm Ball Joint

With the vehicle stopped and the engine off, check for excessive free-play in the steering wheel. Check the linkage for bends or damage. Check the dust boots and ball joints for deterioration, cracks, or damage.

Replace any damaged parts.

### Drive Shafts and Boots

Check the drive shafts, boots and clamps for cracks, deterioration, or damage. Replace any damaged parts and, if necessary, repack the grease.

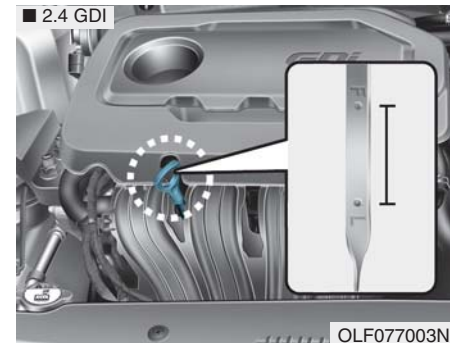
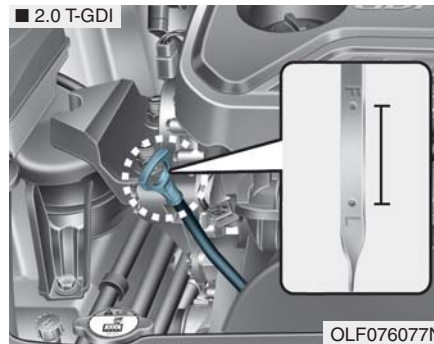
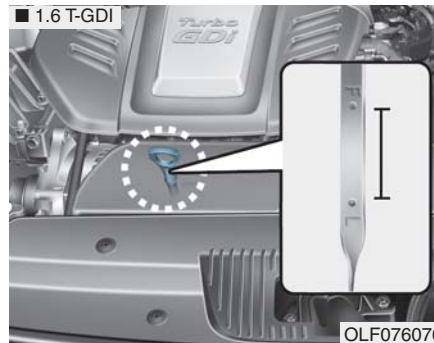
### Air Conditioning Refrigerant

Check the air conditioning lines and connections for leakage and damage.

## ENGINE OIL

### Checking the Engine Oil Level

1. Follow all of the oil manufacturer's precautions.
2. Be sure the vehicle is on level ground in P (Park) with the parking brake set and the wheels blocked.
3. Turn the engine on and allow the engine to reach normal operating temperature.
4. Turn the engine off and wait about five minutes for the oil to return to the oil pan.
5. Pull the dipstick out, wipe it clean, and re-insert it fully.

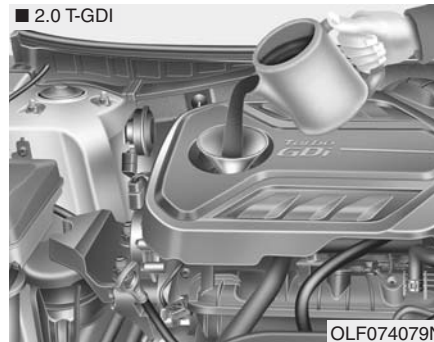
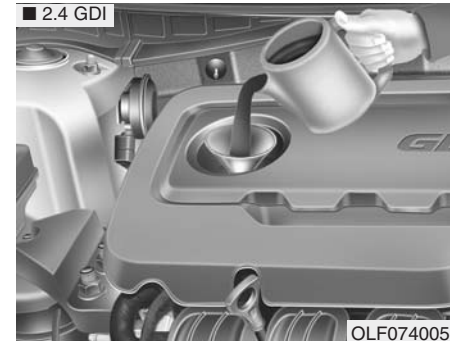
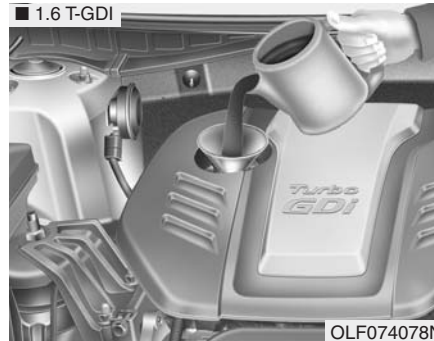


6. Pull the dipstick out again and check the level. The level should be between F and L.
7. If it is near or at L, add enough oil to bring the level to F.

### NOTICE

To prevent damage to your engine:

- Do not overfill with engine oil. Add oil in small quantities and recheck level to ensure engine is not overfilled.
- Do not spill engine oil when adding or changing engine oil. Use a funnel to help prevent oil from being spilled on engine components. Wipe off spilled oil immediately



### NOTICE

Use only the specified engine oil (refer to "Recommended Lubricants and Capacities" in chapter 8).

## Checking the Engine Oil and Filter



Have engine oil and filter changed by an authorized HYUNDAI dealer according to the Maintenance Schedule at the beginning of this chapter.

### **WARNING**

Used engine oil may cause irritation or cancer of the skin if left in contact with the skin for prolonged periods of time. Always protect your skin by washing your hands thoroughly with soap and warm water as soon as possible after handling used oil.

## ENGINE COOLANT

The high-pressure cooling system has a reservoir filled with year-round antifreeze coolant. The reservoir is filled at the factory.

Check the antifreeze protection and coolant level at least once a year, at the beginning of the winter season and before traveling to a colder climate.

### Checking the Engine Coolant Level



#### WARNING



Never remove the radiator cap or the drain plug while the engine and radiator are hot. Hot coolant and steam may blow out under pressure, causing serious injury.

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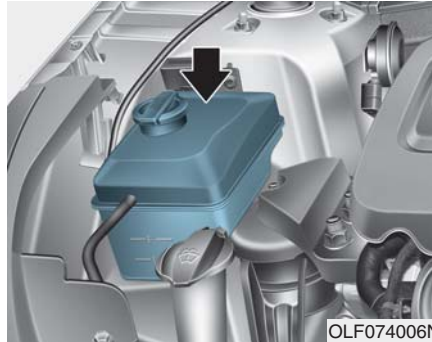
Turn the engine off and wait until the engine cools down. Use extreme care when removing the radiator cap. Wrap a thick towel around it, and turn it counterclockwise slowly to the first stop. Step back while the pressure is released from the cooling system. When you are sure all the pressure has been released, press down on the cap, using a thick towel, and continue turning counterclockwise to remove it.

## ⚠ WARNING



**The electric motor for the cooling fan may continue to operate or start up when the engine is not running and can cause serious injury. Keep hands, clothing and tools away from the rotating fan blades of the cooling fan.**

The electric motor for the cooling fan is controlled by engine coolant temperature, refrigerant pressure and vehicle speed. As the engine coolant temperature decreases, the electric motor will automatically shut off. This is a normal condition. If your vehicle is equipped with GDI, the electric motor for the cooling fan may begin to operate at any time and continue to operate until you disconnect the negative battery cable.



Check the condition and connections of all cooling system hoses and heater hoses. Replace any swollen or deteriorated hoses.

The coolant level should be filled between the F and the L marks on the side of the coolant reservoir when the engine is cool.

If the coolant level is low, add enough distilled (deionized) water to bring the level to the F mark, but do not overfill. If frequent additions are required, we recommend that you see an authorized HYUNDAI dealer for a cooling system inspection.

## **Recommended engine coolant**

- When adding coolant, use only deionized water, distilled water or soft water for your vehicle and never mix hard water in the coolant filled at the factory.
- An improper coolant mixture can result in severe malfunction or engine damage.
- The engine in your vehicle has aluminum engine parts and must be protected by an ethylene-glycol with phosphate based coolant to prevent corrosion and freezing.
- Do not use alcohol or methanol coolant or mix them with the specified coolant.
- Do not use a solution that contains more than 60% antifreeze or less than 35% antifreeze, which would reduce the effectiveness of the solution.

For mixing percentage, refer to the following table:

Ambient Temperature	Mixture Percentage (volume)	
	Antifreeze	Water
-15°C (5°F)	35	65
-25°C (-13°F)	40	60
-35°C (-31°F)	50	50
-45°C (-49°F)	60	40

### **i** Information

If in doubt about the mix ratio, a 50% water and 50% antifreeze mix is the easiest to mix together as it will be the same quantity of each. It is suitable to use for most temperature ranges of -35°C (-31°F) and higher.

## Changing Engine Coolant

Have coolant changed by an authorized HYUNDAI dealer according to the Maintenance Schedule at the beginning of this chapter.

### **! WARNING**

**Do not use engine coolant or antifreeze in the washer fluid reservoir.**

**Engine coolant can severely obscure visibility when sprayed on the windshield and may cause loss of vehicle control resulting in an accident.**

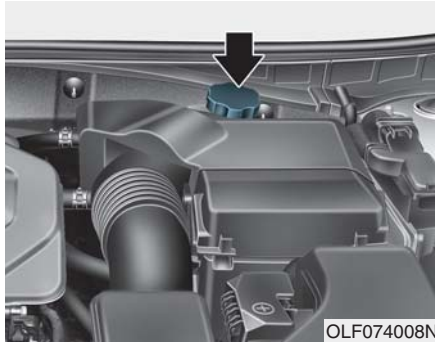
**Engine coolant may also cause damage to paint and body trim.**

### **NOTICE**

**To prevent damage to engine parts, put a thick towel around the radiator cap before refilling the coolant to prevent the coolant from overflowing into engine parts, such as the generator.**

## BRAKE FLUID

### Checking the Brake Fluid Level



Check the fluid level in the reservoir periodically. The fluid level should be between MAX and MIN marks on the side of the reservoir.

Before removing the reservoir cap and adding brake fluid, clean the area around the reservoir cap thoroughly to prevent brake fluid contamination.

If the level is low, add the specified brake fluid to the MAX level. The level will fall with accumulated mileage. This is a normal condition associated with the wear of the brake linings. If the fluid level is excessively low, have the brake system checked by an authorized HYUNDAI dealer.

#### **!** WARNING

If the brake system requires frequent additions of fluid this could indicate a leak in the brake system. Have the vehicle inspected by an authorized HYUNDAI dealer.

#### **!** WARNING

Do not allow brake fluid to come in contact with your eyes. If brake fluid comes in contact with your eyes, flush your eyes with clean water for at least 15 minutes and get immediate medical attention.

#### **NOTICE**

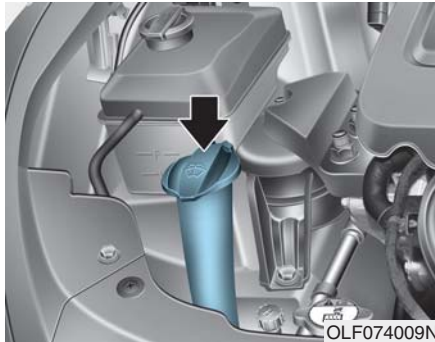
- Do not allow brake fluid to contact the vehicle's body paint, as paint damage will result.
- Brake fluid, which has been exposed to open air for an extended time should NEVER be used as its quality cannot be guaranteed. It should be disposed of properly.
- Do not use the wrong kind of brake fluid. A few drops of mineral based oil, such as engine oil, in your brake system can damage brake system parts.

#### **i** Information

Use only the specified brake fluid (refer to "Recommended Lubricants and Capacities" in chapter 8).

## WASHER FLUID

### Checking the Washer Fluid Level



Check the fluid level in the washer fluid reservoir and add fluid if necessary. Plain water may be used if washer fluid is not available. However, use washer solvent with antifreeze characteristics in cold climates to prevent freezing.

### WARNING

To prevent serious injury or death, take the following safety precautions when using washer fluid:

- Do not use engine coolant or antifreeze in the washer fluid reservoir.
- Engine coolant can severely obscure visibility when sprayed on the windshield and may cause loss of vehicle control resulting in an accident or damage to paint and body trim.
- Do not allow sparks or flame to contact the washer fluid or the washer fluid reservoir. Washer fluid may contain alcohol and can be flammable.
- Do not drink washer fluid and avoid contact with skin. Washer fluid is poisonous to humans and animals.
- Keep washer fluid away from children and animals.

## PARKING BRAKE

### Checking the Parking Brake

#### Foot type

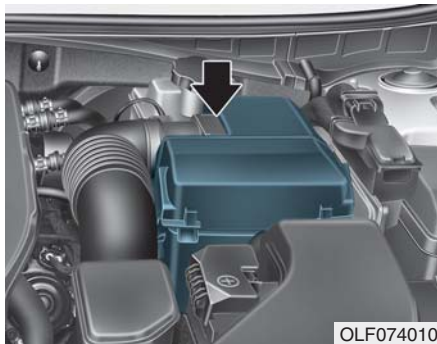


Check whether the stroke is within specification when the parking brake pedal is depressed with 20 kg (44 lb, 196 N) of force. Also, the parking brake alone should securely hold the vehicle on a fairly steep grade. If the stroke is more or less than specified, have the parking brake adjusted by an authorized HYUNDAI dealer.

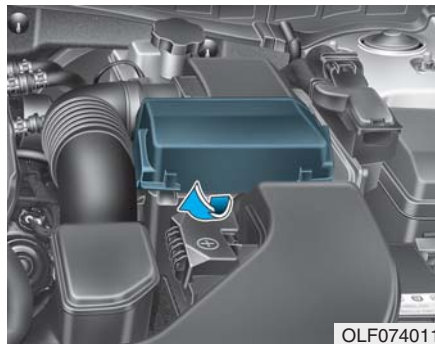
**Stroke : 3 notch**

## AIR CLEANER

### Filter Replacement



The air cleaner filter can be cleaned for inspection using compressed air. Do not attempt to wash or to rinse it, as water will damage the filter. If soiled, the air cleaner filter must be replaced.



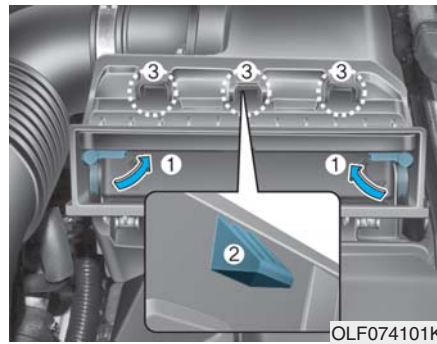
1. Remove the air cleaner filter cover.
2. Wipe the inside of the air cleaner.



3. Pull down the lever to the UNLOCK position.



4. Replace the air cleaner filter.



5. Pull up the lever (1) to the LOCK position.
6. Install the cover and make sure the inner hooks (2) to be inserted to holes (3).
7. Check if the cover is firmly installed.

### **i** Information

If the vehicle is operated in extremely dusty or sandy areas, replace the element more often than the usual recommended intervals (refer to "Maintenance Under Severe Usage Conditions" in this chapter).

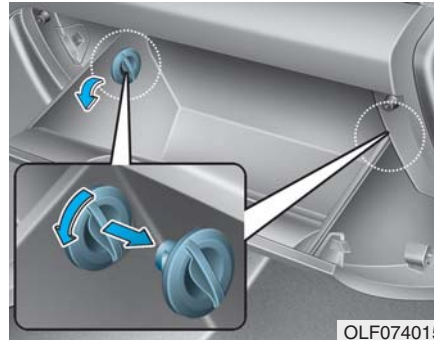
### **NOTICE**

- Do not drive with the air cleaner filter removed. This will result in excessive engine wear.
- When removing the air cleaner filter, be careful that dust or dirt does not enter the air intake, or damage may result.
- Use HYUNDAI genuine parts, use of non-genuine parts could damage the air flow sensor.

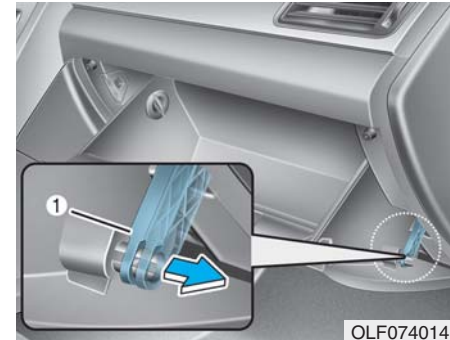
## CLIMATE CONTROL AIR FILTER

### Filter Inspection

The climate control air filter should be replaced according to the Maintenance Schedule. If the vehicle is operated in severely air-polluted cities or on dusty rough roads for a long period, it should be inspected more frequently and replaced earlier. When you replace the climate control air filter, replace it performing the following procedure, and be careful to avoid damaging other components.



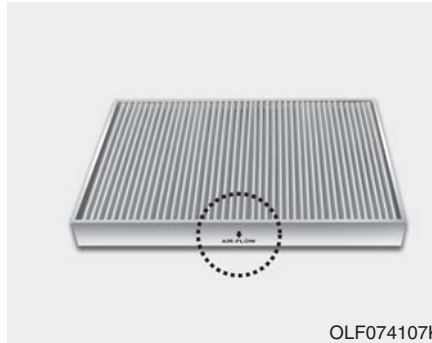
1. With the glove box open, remove the stoppers on both sides to allow the glove box to hang freely on the hinges.



2. Remove the support rod (1).



3. Remove the climate control air filter case by pulling out the right side of the cover.



4. Replace the climate control air filter.
5. Reassemble in the reverse order of disassembly.

### **NOTICE**

Install a new climate control air filter in the correct direction with the arrow symbol (↓) facing downwards. Otherwise, the climate control effects may decrease, possibly with a noise.

## WIPER BLADES

### Blade Inspection

Contamination of either the windshield or the wiper blades with foreign matter can reduce the effectiveness of the windshield wipers. Common sources of contamination are insects, tree sap, and hot wax treatments used by some commercial car washes. If the blades are not wiping properly, clean both the window and the blades with a clean cloth dampened with washer fluid or clean water.

#### NOTICE

**To prevent damage to the wiper blades, arms or other components, do not:**

- **Use gasoline, kerosene, paint thinner, or other solvents on or near them.**
- **Attempt to move the wipers manually.**
- **Use non-specified wiper blades.**

#### **i** Information

Commercial hot waxes applied by automatic car washes have been known to make the windshield difficult to clean.

### Blade Replacement

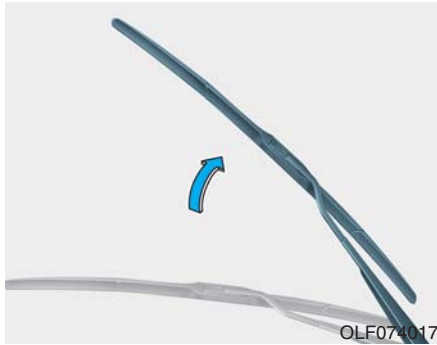
When the wipers no longer clean adequately, the blades may be worn or cracked, and require replacement.

#### NOTICE

**To prevent damage to the wiper arms or other components, do not attempt to move the wipers manually.**

#### NOTICE

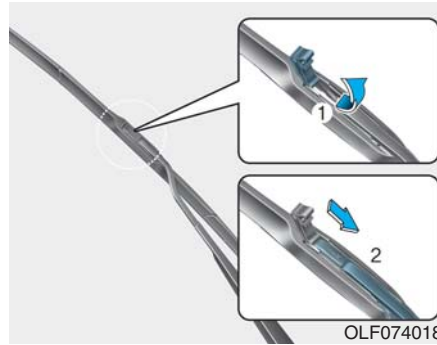
**The use of a non-specified wiper blade could result in wiper malfunction and failure.**



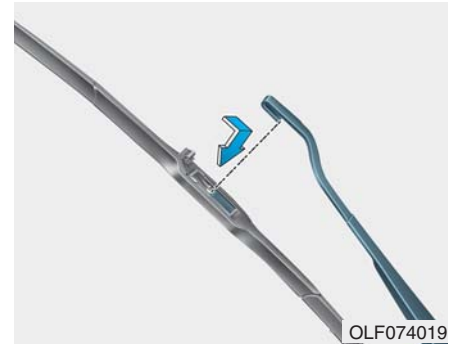
1. Raise the wiper arm.

### **NOTICE**

**Do not allow the wiper arm to fall against the windshield, since it may chip or crack the windshield.**



2. Lift the wiper blade clip. Then push down the blade body.



3. Install the new blade assembly in the reverse order of removal.  
4. Return the wiper arm on the windshield.

## BATTERY

### WARNING

To prevent **SERIOUS INJURY** or **DEATH** to you or bystanders, always follow these precautions when working near or handling the battery:



Always read and follow instructions carefully when handling a battery.



Wear eye protection designed to protect the eyes from acid splashes.



Keep all flames, sparks, or smoking materials away from the battery.



Hydrogen is always present in battery cells, is highly combustible, and may explode if ignited.



Keep batteries out of reach of children.

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Batteries contain sulfuric acid which is highly corrosive. Do not allow acid to contact your eyes, skin or clothing.

If acid gets into your eyes, flush your eyes with clean water for at least 15 minutes and get immediate medical attention. If acid gets on your skin, thoroughly wash the area. If you feel pain or a burning sensation, get medical attention immediately.

- When lifting a plastic-cased battery, excessive pressure on the case may cause battery acid to leak. Lift with a battery carrier or with your hands on opposite corners.
- Do not attempt to jump start your vehicle if your battery is frozen.

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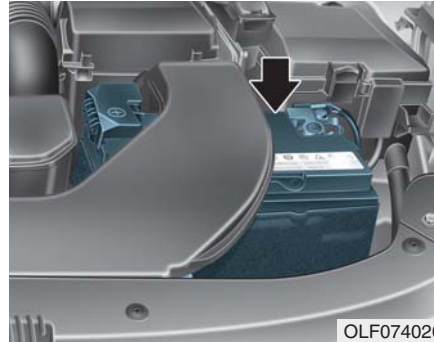
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- **NEVER** attempt to recharge the battery when the vehicle's battery cables are connected to the battery.
- The electrical ignition system works with high voltage. **NEVER** touch these components with the engine running or when the ignition is in the ON position.

### NOTICE

- When you do not use the vehicle for a long time in a low temperature area, disconnect the battery and keep it indoors.
- Always charge the battery fully to prevent battery case damage in low temperature areas.

### For Best Battery Service



- Keep the battery securely mounted.
- Keep the battery top clean and dry.
- Keep the terminals and connections clean, tight, and coated with petroleum jelly or terminal grease.
- Rinse any spilled acid from the battery immediately with a solution of water and baking soda.

### Battery Recharging

#### WARNING

Always follow these instructions when recharging your vehicle's battery to avoid the risk of **SERIOUS INJURY** or **DEATH** from explosions or acid burns:

- Before performing maintenance or recharging the battery, turn off all accessories and place the ignition switch to the **LOCK/OFF** position.
- Keep all flames, sparks, or smoking materials away from the battery.
- Always work outdoors or in a well ventilated area.
- Wear eye protection when checking the battery during charging.
- The battery must be removed from the vehicle and placed in a well ventilated area.

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- **Watch the battery during charging, and stop or reduce the charging rate if the battery cells begin boiling violently.**
- **The negative battery cable must be removed first and installed last when the battery is disconnected. Disconnect the battery charger in the following order:**
  - (1) **Turn off the battery charger main switch.**
  - (2) **Unhook the negative clamp from the negative battery terminal.**
  - (3) **Unhook the positive clamp from the positive battery terminal.**
- **Always use a genuine HYUNDAI approved battery when you replace the battery.**

### ***By jump starting***

After a jump start from a good battery, idle the vehicle with the headlights turned ON for 20-30 minutes before started driving. The vehicle may not run properly if you drive it off before the battery had a chance to adequately recharge. See "Jump Starting" in chapter 6 for more information on jump starting procedures.

### ***i* Information**



**An inappropriately disposed battery can be harmful to the environment and human health.**

**Dispose the battery according to your local law(s) or regulation.**

### Reset features

Some items need to be reset after the battery has been discharged or the battery has been disconnected.

See chapter 3 for:

- Power Windows
- Trip Computer
- Climate Control System
- Clock
- Audio System
- Sunroof

## TIRES AND WHEELS

### WARNING

Tire failure may cause loss of vehicle control resulting in an accident. To reduce risk of **SERIOUS INJURY** or **DEATH**, take the following precautions:

- Inspect your tires monthly for proper inflation as well as wear and damage.
- The recommended cold tire pressure for your vehicle can be found in this manual and on the tire label located on the driver's side center pillar. Always use a tire pressure gauge to measure tire pressure. Tires with too much or too little pressure wear unevenly causing poor handling.
- Check the pressure of the spare every time you check the pressure of the other tires on your vehicle.

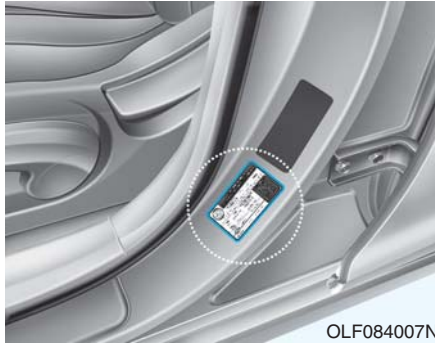
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- Replace tires that are worn, show uneven wear, or are damaged. Worn tires can cause loss of braking effectiveness, steering) control, or traction.
- **ALWAYS** replace tires with the same size as each tire that was originally supplied with this vehicle. Using tires and wheels other than the recommended sizes could cause unusual handling characteristics, poor vehicle control, or negatively affect your vehicle's Anti-Lock Brake System (ABS) resulting in a serious accident.

### Tire Care

For proper maintenance, safety, and maximum fuel economy, you must always maintain recommended tire inflation pressures and stay within the load limits and weight distribution recommended for your vehicle.



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All specifications (sizes and pressures) can be found on a label attached to the driver's side center pillar.

### Recommended Cold Tire Inflation Pressures

All tire pressures (including the spare) should be checked when the tires are cold. "Cold tires" means the vehicle has not been driven for at least three hours or driven less than 1.6 km (one mile).

Warm tires normally exceed recommended cold tire pressures by 28 to 41 kPa (4 to 6 psi). Do not release air from warm tires to adjust the pressure or the tires will be under-inflated. For recommended inflation pressure, refer to "Tire and Wheels" in chapter 8.

### WARNING

**Recommended pressures must be maintained for the best ride, vehicle handling, and minimum tire wear.**

**Over-inflation or under-inflation can reduce tire life, adversely affect vehicle handling, and lead to sudden tire failure that could result in loss of vehicle control resulting in an accident.**

**Severe under-inflation can lead to severe heat build-up, causing blowouts, tread separation and other tire failures that can result in the loss of vehicle control resulting in an accident. This risk is much higher on hot days and when driving for long periods at high speeds.**

 **CAUTION**

- **Under-inflation results in excessive wear, poor handling and reduced fuel economy. Wheel deformation is also possible. Keep your tire pressures at the proper levels. If a tire frequently needs refilling, have it checked by an authorized HYUNDAI dealer.**
- **Over-inflation produces a harsh ride, excessive wear at the center of the tire tread, and a greater possibility of damage from road hazards.**

## Check Tire Inflation Pressure

Check your tires, including the spare tire, once a month or more.

### *How to check*

Use a good quality tire pressure gauge to check tire pressure. You can not tell if your tires are properly inflated simply by looking at them. Radial tires may look properly inflated when they are under-inflated.

Remove the valve cap from the tire valve stem. Press the tire gauge firmly onto the valve to get a pressure measurement. If the cold tire inflation pressure matches the recommended pressure on the tire and loading information label, no further adjustment is necessary. If the pressure is low, add air until you reach the recommended pressure. Make sure to put the valve caps back on the valve stems. Without the valve cap, dirt or moisture could get into the valve core and cause air leakage. If a valve cap is missing, install a new one as soon as possible.

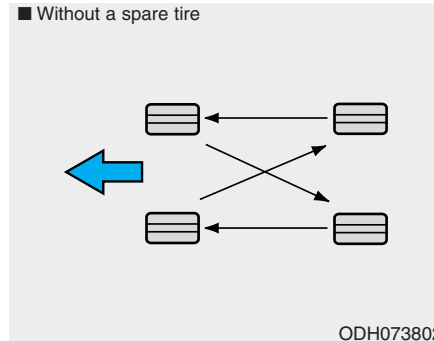
If you overfill the tire, release air by pushing on the metal stem in the center of the tire valve. Recheck the tire pressure with the tire gauge. Be sure to put the valve caps back on the valve stems. Without the valve cap, dirt or moisture could get into the valve core and cause air leakage. If a valve cap is missing, install a new one as soon as possible.

### Tire Rotation

To equalize tread wear, HYUNDAI recommends that the tires be rotated every 12,000 km (7,500 miles) or sooner if irregular wear develops.

During rotation, check the tires for correct balance.

When rotating tires, check for uneven wear and damage. Abnormal wear is usually caused by incorrect tire pressure, improper wheel alignment, out-of-balance wheels, severe braking or severe cornering. Look for bumps or bulges in the tread or side of tire. Replace the tire if you find either of these conditions. Replace the tire if fabric or cord is visible. After rotation, be sure to bring the front and rear tire pressures to specification and check lug nut tightness (proper torque is 11-13 kg.m [79-94 lb.ft]).



Disc brake pads should be inspected for wear whenever tires are rotated.

### Information

The outside and inside of the unsymmetrical tire is distinguishable. When installing an unsymmetrical tire, be sure to install the side marked "outside" face the outside. If the side marked "inside" is installed on the outside, it will have a bad effect on vehicle performance.

### WARNING

- Do not use the compact spare tire for tire rotation.
- Do not mix bias ply and radial ply tires under any circumstances. This may cause unusual handling characteristics that may cause loss of vehicle control resulting in an accident.

## Wheel Alignment and Tire Balance

The wheels on your vehicle were aligned and balanced carefully at the factory to give you the longest tire life and best overall performance.

In most cases, you will not need to have your wheels aligned again. However, if you notice unusual tire wear or your vehicle pulling one way or the other, the alignment may need to be reset.

If you notice your vehicle vibrating when driving on a smooth road, your wheels may need to be rebalanced.

### NOTICE

**Improper wheel weights can damage your vehicle's aluminum wheels. Use only approved wheel weights.**

## Tire Replacement



If the tire is worn evenly, a tread wear indicator will appear as a solid band across the tread. This shows there is less than 1.6 mm (1/16 inch) of tread left on the tire. Replace the tire when this happens.

Do not wait for the band to appear across the entire tread before replacing the tire.

## ⚠ WARNING

**To reduce the risk of DEATH or SERIOUS INJURY:**

- Replace tires that are worn, show uneven wear, or are damaged. Worn tires can cause loss of braking effectiveness, steering control, and traction.
- Always replace tires with the same size as each tire that was originally supplied with this vehicle. Using tires and wheels other than the recommended sizes could cause unusual handling characteristics, poor vehicle control, or negatively affect your vehicle's Anti-Lock Brake System (ABS) resulting in a serious accident.

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- **When replacing tires (or wheels), it is recommended to replace the two front or two rear tires (or wheels) as a pair. Replacing just one tire can seriously affect your vehicle's handling.**
- **Tires degrade over time, even when they are not being used. Regardless of the remaining tread, HYUNDAI recommends that tires be replaced after six (6) years of normal service.**
- **Heat caused by hot climates or frequent high loading conditions can accelerate the aging process. Failure to follow this warning may cause sudden tire failure, which could lead to a loss of vehicle control resulting in an accident.**

### **Compact spare tire replacement**

A compact spare tire has a shorter tread life than a regular size tire. Replace it when you can see the tread wear indicator bars on the tire. The replacement compact spare tire should be the same size and design tire as the one provided with your new vehicle and should be mounted on the same compact spare tire wheel. The compact spare tire is not designed to be mounted on a regular size wheel, and the compact spare tire wheel is not designed for mounting a regular size tire.

#### **WARNING**

**The original tire should be repaired or replaced as soon as possible to avoid failure of the spare and loss of vehicle control resulting in an accident. The compact spare tire is for emergency use only. Do not operate your vehicle over 80 km/h (50 mph) when using the compact spare tire.**

### **Wheel Replacement**

When replacing the metal wheels for any reason, make sure the new wheels are equivalent to the original factory units in diameter, rim width and offset.

### **Tire Traction**

Tire traction can be reduced if you drive on worn tires, tires that are improperly inflated or on slippery road surfaces. Tires should be replaced when tread wear indicators appear. To reduce the possibility of losing control, slow down whenever there is rain, snow or ice on the road.

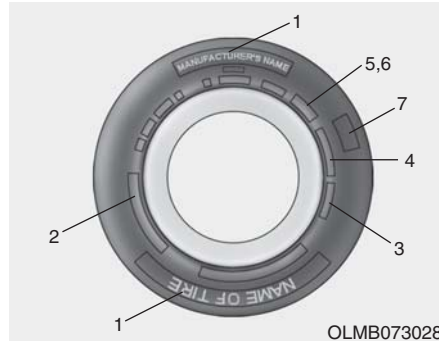
## Tire Maintenance

In addition to proper inflation, correct wheel alignment helps to decrease tire wear. If you find a tire is worn unevenly, have your dealer check the wheel alignment.

When you have new tires installed, make sure they are balanced. This will increase vehicle ride comfort and tire life. Additionally, a tire should always be rebalanced if it is removed from the wheel.

## Tire Sidewall Labeling

This information identifies and describes the fundamental characteristics of the tire and also provides the tire identification number (TIN) for safety standard certification. The TIN can be used to identify the tire in case of a recall.



### 1. Manufacturer or brand name

Manufacturer or brand name is shown.

### 2. Tire size designation

A tire's sidewall is marked with a tire size designation. You will need this information when selecting replacement tires for your car. The following explains what the letters and numbers in the tire size designation mean.

Example tire size designation:

(These numbers are provided as an example only; your tire size designator could vary depending on your vehicle.)

**205/65R16 95H**

205 - Tire width in millimeters.

65 - Aspect ratio. The tire's section height as a percentage of its width.

R - Tire construction code (Radial).

16 - Rim diameter in inches.

95 - Load Index, a numerical code associated with the maximum load the tire can carry.

H - Speed Rating Symbol. See the speed rating chart in this section for additional information.

### Wheel size designation

Wheels are also marked with important information that you need if you ever have to replace one. The following explains what the letters and numbers in the wheel size designation mean.

Example wheel size designation:

#### **6.5JX16**

6.5 - Rim width in inches.

J - Rim contour designation.

16 - Rim diameter in inches.

### Tire speed ratings

The chart below lists many of the different speed ratings currently being used for passenger car tires. The speed rating is part of the tire size designation on the sidewall of the tire. This symbol corresponds to that tire's designed maximum safe operating speed.

Speed Rating Symbol	Maximum Speed
S	180 km/h (112 mph)
T	190 km/h (118 mph)
H	210 km/h (130 mph)
V	240 km/h (149 mph)
Z	Above 240 km/h (149 mph)

### **3. Checking tire life (TIN : Tire Identification Number)**

Any tires that are over six years old, based on the manufacturing date, (including the spare tire) should be replaced by new ones. You can find the manufacturing date on the tire sidewall (possibly on the inside of the wheel), displaying the DOT Code. The DOT Code is a series of numbers on a tire consisting of numbers and English letters. The manufacturing date is designated by the last four digits (characters) of the DOT code.

**DOT : XXXX XXXX OOOO**

The front part of the DOT means a plant code number, tire size and tread pattern and the last four numbers indicate week and year manufactured.

For example:

DOT XXXX XXXX 1617 represents that the tire was produced in the 16th week of 2017.

#### **4. Tire ply composition and material**

The number of layers or plies of rubber-coated fabric in the tire. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others. The letter "R" means radial ply construction; the letter "D" means diagonal or bias ply construction; and the letter "B" means belted-bias ply construction.

#### **5. Maximum permissible inflation pressure**

This number is the greatest amount of air pressure that should be put in the tire. Do not exceed the maximum permissible inflation pressure. Refer to the Tire and Loading Information label for recommended inflation pressure.

#### **6. Maximum load rating**

This number indicates the maximum load in kilograms and pounds that can be carried by the tire. When replacing the tires on the vehicle, always use a tire that has the same load rating as the factory installed tire.

#### **7. Uniform tire quality grading**

Quality grades can be found where applicable on the tire sidewall between tread shoulder and maximum section width.

For example:

TREAD wear 200  
TRACTION AA  
TEMPERATURE A

#### **Tread wear**

The tread wear grade is a comparative rating based on the wear rate of the tire when tested under controlled conditions on a specified government test course. For example, a tire graded 150 would wear one-and-a-half times ( $1\frac{1}{2}$ ) as well on the government course as a tire graded 100.

The relative performance of tires depends upon the actual conditions of their use, however, and may depart significantly from the norm due to variations in driving habits, service practices and differences in road characteristics and climate.

These grades are molded on the sidewalls of passenger vehicle tires. The tires available as standard or optional equipment on your vehicle may vary with respect to grade.

### Traction - AA, A, B & C

The traction grades, from highest to lowest, are AA, A, B and C. Those grades represent the tire's ability to stop on wet pavement as measured under controlled conditions on specified government test surfaces of asphalt and concrete. A tire marked C may have poor traction performance.

#### **WARNING**

**The traction grade assigned to this tire is based on straight-ahead braking traction tests, and does not include acceleration, cornering, hydroplaning, or peak traction characteristics.**

### Temperature - A, B & C

The temperature grades are A (the highest), B and C representing the tire's resistance to the generation of heat and its ability to dissipate heat when tested under controlled conditions on a specified indoor laboratory test wheel.

Sustained high temperature can cause the material of the tire to degenerate and reduce tire life, and excessive temperature can lead to sudden tire failure. Grades B and A represent higher levels of performance on the laboratory test wheel than the minimum required by law.

#### **WARNING**

**The temperature grade for this tire is established for a tire that is properly inflated and not overloaded. Excessive speed, under-inflation, over-inflation, or excessive loading, either separately or in combination, can cause heat build-up and possible sudden tire failure. This may cause loss of vehicle control resulting in an accident.**

## Tire Terminology and Definitions

### **Air Pressure**

The amount of air inside the tire pressing outward on the tire. Air pressure is expressed in pounds per square inch (psi) or kilopascal (kPa).

### **Accessory Weight**

This means the combined weight of optional accessories. Some examples of optional accessories are automatic transmission, power seats, and air conditioning.

### **Aspect Ratio**

The relationship of a tire's height to its width.

### **Belt**

A rubber coated layer of cords that is located between the plies and the tread. Cords may be made from steel or other reinforcing materials.

### **Bead**

The tire bead contains steel wires wrapped by steel cords that hold the tire onto the rim.

### **Bias Ply Tire**

A pneumatic tire in which the plies are laid at alternate angles less than 90 degrees to the centerline of the tread.

### **Cold Tire Pressure**

The amount of air pressure in a tire, measured in pounds per square inch (psi) or kilopascals (kPa) before a tire has built up heat from driving.

### **Curb Weight**

This means the weight of a motor vehicle with standard and optional equipment including the maximum capacity of fuel, oil and coolant, but without passengers and cargo.

### **DOT Markings**

The DOT code includes the Tire Identification Number (TIN), an alphanumeric designator which can also identify the tire manufacturer, production plant, brand and date of production.

### **GVWR**

Gross Vehicle Weight Rating

### **GAWR FRT**

Gross Axle Weight Rating for the Front Axle.

### **GAWR RR**

Gross Axle Weight Rating for the Rear axle.

### **Intended Outboard Sidewall**

The side of an asymmetrical tire, that must always face outward when mounted on a vehicle.

### **Kilopascal (kPa)**

The metric unit for air pressure.

### **Light truck(LT) tire**

A tire designated by its manufacturer as primarily intended for use on light-weight trucks or multipurpose passenger vehicles.

### **Load ratings**

The maximum load that a tire is rated to carry for a given inflation pressure.

### **Load Index**

An assigned number ranging from 1 to 279 that corresponds to the load carrying capacity of a tire.

### **Maximum Inflation Pressure**

The maximum air pressure to which a cold tire may be inflated. The maximum air pressure is molded onto the sidewall.

### **Maximum Load Rating**

The load rating for a tire at the maximum permissible inflation pressure for that tire.

### **Maximum Loaded Vehicle Weight**

The sum of curb weight; accessory weight; vehicle capacity weight; and production options weight.

### **Normal Occupant Weight**

The number of occupants a vehicle is designed to seat multiplied by 68 kg (150 pounds).

### **Occupant Distribution**

Designated seating positions.

### **Outward Facing Sidewall**

An asymmetrical tire has a particular side that faces outward when mounted on a vehicle. The outward facing sidewall bears white lettering or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same moldings on the inner facing sidewall.

### **Passenger (P-Metric) tire**

A tire used on passenger cars and some light duty trucks and multipurpose vehicles.

### **Ply**

A layer of rubber-coated parallel cords

### ***Pneumatic tire***

A mechanical device made of rubber, chemicals, fabric and steel or other materials, that, when mounted on an automotive wheel provides the traction and contains the gas or fluid that sustains the load.

### ***Pneumatic options weight***

The combined weight of installed regular production options weighing over 2.3 kg. (5 lb) in excess of the standard items which they replace, not previously considered in curb weight or accessory weight, including heavy duty breaks, ride levelers, roof rack, heavy duty battery, and special trim.

### ***Recommended Inflation Pressure***

Vehicle manufacturer's recommended tire inflation pressure as shown on the tire placard.

### ***Radial Ply Tire***

A pneumatic tire in which the ply cords that extend to the beads are laid at 90 degrees to the centerline of the tread.

### ***Rim***

A metal support for a tire and upon which the tire beads are seated.

### ***Sidewall***

The portion of a tire between the tread and the bead.

### ***Speed Rating***

An alphanumeric code assigned to a tire indicating the maximum speed at which a tire can operate.

### ***Traction***

The friction between the tire and the road surface. The amount of grip provided.

### ***Tread***

The portion of a tire that comes into contact with the road.

### ***Treadwear Indicators***

Narrow bands, sometimes called "wear bars", that show across the tread of a tire when only 1/16 inch of tread remains.

### ***UTQGS***

Uniform Tire Quality Grading Standards is a tire information system that provides consumers with ratings for a tire's traction, temperature and treadwear. Ratings are determined by tire manufacturers using government testing procedures. The ratings are molded into the sidewall of the tire.

### ***Vehicle Capacity Weight***

The number of designated seating positions multiplied by 68 kg (150 lbs.) plus the rated cargo and luggage load.

### ***Vehicle Maximum Load on the Tire***

Load on an individual tire due to curb and accessory weight plus maximum occupant and cargo weight.

### ***Vehicle Normal Load on the Tire***

Load on an individual tire that is determined by distributing to each axle its share of the curb weight, accessory weight, and normal occupant weight and dividing by 2.

### ***Vehicle Placard***

A label permanently attached to a vehicle showing the original equipment tire size and recommended inflation pressure.

### **All Season Tires**

HYUNDAI specifies all season tires on some models to provide good performance for use all year round, including snowy and icy road conditions. All season tires are identified by ALL SEASON and/or M+S (Mud and Snow) on the tire sidewall. Snow tires have better snow traction than all season tires and may be more appropriate in some areas.

### **Summer Tires**

HYUNDAI specifies summer tires on some models to provide superior performance on dry roads. Summer tire performance is substantially reduced in snow and ice. Summer tires do not have the tire traction rating M+S (Mud and Snow) on the tire side wall. If you plan to operate your vehicle in snowy or icy conditions, HYUNDAI recommends the use of snow tires or all season tires on all four wheels.

### **Snow Tires**

If you equip your car with snow tires, they should be the same size and have the same load capacity as the original tires. Snow tires should be installed on all four wheels; otherwise, poor handling may result. Snow tires should carry 28 kPa (4 psi) more air pressure than the pressure recommended for the standard tires on the tire label on the driver's side of the center pillar, or up to the maximum pressure shown on the tire sidewall, whichever is less. Do not drive faster than 120 km/h (75 mph) when your vehicle is equipped with snow tires.

## Radial-Ply Tires

Radial-ply tires provide improved tread life, road hazard resistance and smoother high speed ride. The radial-ply tires used on this vehicle are of belted construction, and are selected to complement the ride and handling characteristics of your vehicle. Radial-ply tires have the same load carrying capacity, as bias-ply or bias belted tires of the same size, and use the same recommended inflation pressure. Mixing of radial-ply tires with bias-ply or bias belted tires is not recommended. Any combinations of radial-ply and bias-ply or bias belted tires when used on the same vehicle will seriously deteriorate vehicle handling. The best rule to follow is: Identical pairs of radial-ply tires should always be used as a set for the front tires and a set for the rear tires.

Longer wearing tires can be more susceptible to irregular tread wear. It is very important to follow the tire rotation interval in this chapter to achieve the tread life potential of these tires. Cuts and punctures in radial-ply tires are repairable only in the tread area, because of sidewall flexing. Consult your tire dealer for radial-ply tire repairs.

### WARNING

**Do not mix bias ply and radial ply tires under any circumstances. This may cause unusual handling characteristics that may cause loss of vehicle control resulting in an accident.**

## Low Aspect Ratio Tires

Low aspect ratio tires, the aspect ratio is lower than 50, are provided for sporty looks.

Because low aspect ratio tires are optimized for handling and braking, it may be more uncomfortable to ride in and there is more noise compare with normal tires.

 **CAUTION**

Because the sidewall of the low aspect ratio tire is shorter than the normal, the wheel and tire of the low aspect ratio tire is easier to be damaged. So, follow the instructions below.

- When driving on a rough road or off road, drive cautiously because tires and wheels may be damaged. And after driving, inspect tires and wheels.
- When passing over a pothole, speed bump, manhole, or curb stone, drive slowly so that the tires and wheels are not damaged.
- If the tire is impacted, we recommend that you inspect the tire condition or contact an authorized HYUNDAI dealer.
- To prevent damage to the tire, inspect the tire condition and pressure every 3,000 km (1,800 miles).

 **CAUTION**

- It is not easy to recognize tire damage with your own eyes. But if there is the slightest hint of tire damage, have the tire checked or replaced because the tire damage may cause air leakage from the tire.
- If the tire is damaged by driving on a rough road, off road, pothole, manhole, or curb stone, it will not be covered by the warranty.

## FUSES

### ■ Blade type



Normal



Blown

### ■ Cartridge type

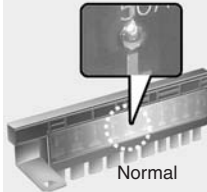


Normal

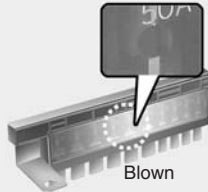


Blown

### ■ Multi fuse



Normal



Blown



Normal



Blown

OLF074075

A vehicle's electrical system is protected from electrical overload damage by fuses.

This vehicle has 2 (or 3) fuse panels, one located in the driver's side panel bolster, the other in the engine compartment near the battery.

If any of your vehicle's lights, accessories, or controls do not work, check the appropriate circuit fuse. If a fuse has blown, the element inside the fuse will be melted or broken.

If the electrical system does not work, first check the driver's side fuse panel. Before replacing a blown fuse, turn the engine and all switches off, and then disconnect the negative battery cable. Always replace a blown fuse with one of the same rating.

If the replacement fuse blows, this indicates an electrical problem. Avoid using the system involved and immediately consult an authorized HYUNDAI dealer.

### Information

Three kinds of fuses are used: blade type for lower amperage rating, cartridge type, and fusible link for higher amperage ratings.

### WARNING

**NEVER** replace a fuse with anything but another fuse of the same rating.

- A higher capacity fuse could cause damage and possibly cause a fire.
- Do not install a wire or aluminum foil instead of the proper fuse - even as a temporary repair. It may cause extensive wiring damage and possibly a fire.

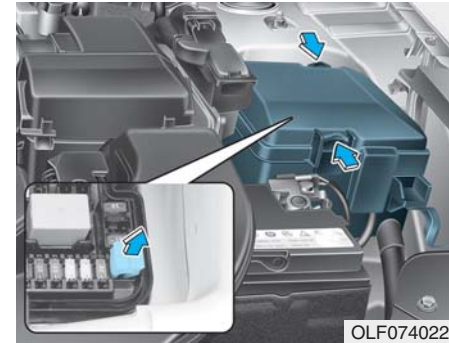
**CAUTION**

Do not use a screwdriver or any other metal object to remove fuses because it may cause a short circuit and damage the system.

### Instrument Panel Fuse Replacement



1. Turn the engine off.
2. Turn all other switches OFF.
3. Open the fuse panel cover.
4. Refer to the label on the inside of the fuse panel cover to locate the suspected fuse location.



5. Pull the suspected fuse straight out. Use the removal tool provided in the engine compartment fuses panel.
6. Check the removed fuse; replace it if it is blown. Spare fuses are provided in the instrument panel fuse panels (or in the engine compartment fuse panel).
7. Push in a new fuse of the same rating, and make sure it fits tightly in the clips. If it fits loosely, consult an authorized HYUNDAI dealer.

In an emergency, if you do not have a spare fuse, use a fuse of the same rating from a circuit you may not need for operating the vehicle, such as the cigarette lighter fuse.

If the headlamps or other electrical components do not work and the fuses are OK, check the fuse panel in the engine compartment. If a fuse is blown, it must be replaced with the same rating.

### **Fuse switch**

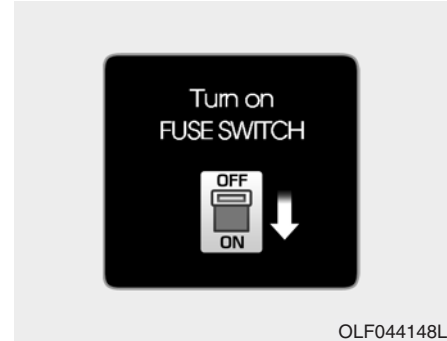


OLF077023

Always, place the fuse switch to the ON position.

If you move the switch to the OFF position, some items such as the audio system and digital clock must be reset and the smart key may not work properly.

### **i Information**



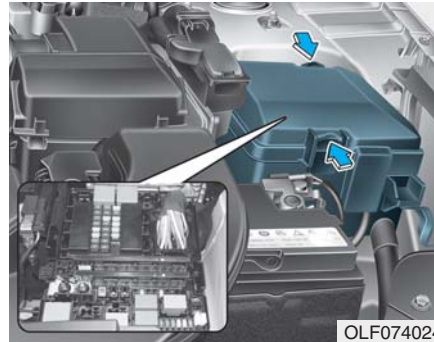
OLF044148L

**If the fuse switch is OFF, the above message will appear.**

### NOTICE

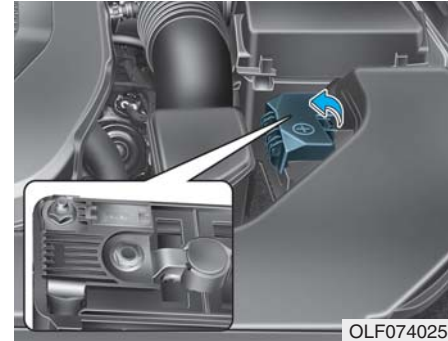
- Always place the fuse switch in the ON position while driving the vehicle.
- Do not move the transportation fuse switch repeatedly. The fuse switch may be damaged.

### Engine Compartment Panel Fuse Replacement



1. Turn the engine off.
2. Turn all other switches OFF.
3. Remove the fuse panel cover by pressing the tap and pulling up.
4. Check the removed fuse; replace it if it is blown. To remove or insert the fuse, use the fuse puller in the engine compartment fuse panel.
5. Push in a new fuse of the same rating, and make sure it fits tightly in the clips. If it fits loosely, consult an authorized HYUNDAI dealer.

### Main fuse



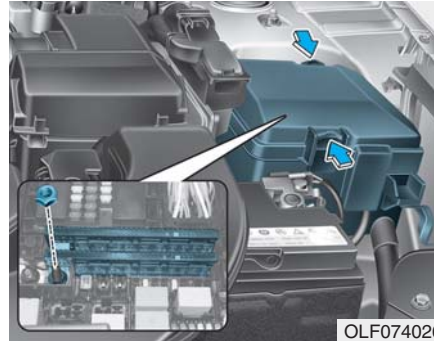
If the main fuse is blown, it must be removed as follows:

1. Turn off the engine.
2. Disconnect the negative battery cable.
3. Remove the fuse panel cover by pressing the tab and pulling it up.
4. Remove the nuts shown in the picture above.
5. Replace the fuse with a new one of the same rating.
6. Reinstall in the reverse order of removal.

**i** Information

If the main fuse is blown, consult an authorized HYUNDAI dealer.

**Multi fuse**



If the multi fuse is blown, it must be removed as follows:

1. Turn off the engine.
2. Disconnect the negative battery cable.
3. Remove the fuse panel cover by pressing the tab and pulling it up.
4. Remove the nuts shown in the picture above.
5. Replace the fuse with a new one of the same rating.
6. Reinstall in the reverse order of removal.

**i** Information

If the multi fuse is blown, consult an authorized HYUNDAI dealer.



## Instrument panel fuse panel

Fuse Name	Fuse rating	Protected Component
<b>SAFETY WINDOW LH</b>	25A	Driver Safety Power Window Module
<b>P/SEAT PASS</b>	30A	Passenger Seat Manual Switch
<b>P/WDW LH</b>	20A	Power Window Main Switch, Rear Power Window Module LH
<b>P/WDW RH</b>	25A	Power Window Main Switch, Rear Power Window Module RH, Passenger Door Module, Passenger Power Window Switch
<b>DR LOCK</b>	20A	Door Lock Relay, Door Unlock Relay
<b>S/HEATER FRT</b>	25A	Front Air Ventilation Seat Module, Front Seat Warmer Module
<b>BRAKE SWITCH</b>	10A	Stop Lamp Switch, Immobilizer Module, Smart Key Control Module
<b><sup>8</sup>MODULE</b>	7.5A	BCM, Smart Key Control Module
<b>SAFETY POWER WINDOW RH</b>	25A	Passenger Safety Power Window Module
<b>SMART KEY</b>	15A	Smart Key Control Module
<b>TRUNK</b>	10A	Trunk Lid Relay, Fuel Filler Door & Trunk Lid Switch
<b><sup>7</sup>MODULE</b>	10A	Digital Clock, Driver/Passenger Door Module
<b>INTERIOR LAMP</b>	10A	Ignition Key Ill. & Door Warning Switch, Front Vanity Lamp Switch LH/RH, Overhead Console Lamp, Room Lamp, Rear Personal Lamp LH/RH, Trunk Room Lamp, Driver/Passenger Smart Key Outside Handle
<b><sup>2</sup>MEMORY</b>	7.5A	Not used
<b>P/SEAT DRV</b>	30A	Driver Seat Manual Switch, Driver IMS Module
<b>CLUSTER</b>	10A	Instrument Cluster

### Instrument panel fuse panel

Fuse Name	Fuse rating	Protected Component
<sup>4</sup> MODULE	10A	Immobilizer Module, Smart Key Control Module
MULTI MEDIA	15A	A/V & Navigation Head Unit
<sup>1</sup> MEMORY	10A	Driver/Passenger Door Module, Driver IMS Module, A/C Control Module, Auto Light & Photo Sensor, Electro Chromic Mirror, Instrument Cluster, Tire Pressure Monitoring Module, Digital Clock, Wireless Charger, A/V & Navigation Head Unit
S/HEATER RR	25A	Rear Seat Warmer Module
<sup>2</sup> SUN ROOF	20A	Panoramic Sunroof Motor
<sup>9</sup> MODULE	7.5A	Front Air Ventilation Seat Module, Front Seat Warmer Module, Rear Seat Warmer Module
MDPS	7.5A	MDPS Unit (Column Type/Rack Type)
<sup>3</sup> MODULE	10A	BCM, Sport Mode Switch, Stop Lamp Switch
<sup>1</sup> MODULE	7.5A	Key Solenoid, Driver/Passenger Door Module
<sup>1</sup> SUN ROOF	20A	[With Panorama] Panorama Sunroof Motor [W/O Panorama] Sunroof Motor
A/CON	7.5A	A/C Control Module, E/R Junction Block (Blower Relay)
<sup>2</sup> MODULE	10A	A/V & Navigation Head Unit, Digital Clock, USB Charger, BCM, AMP, Power Outside Mirror Switch, Wireless Charger, Smart Key Control Module, Overhead Console Lamp, E/R Junction Block (Power Outlet Relay)
A/BAG IND	7.5A	Instrument Cluster
<sup>6</sup> MODULE	10A	Multipurpose Check Connector, A/C Control Module, A/V & Navigation Head Unit, Front Air Ventilation Seat Module, Front Seat Warmer Module, Rear Seat Warmer Module, Driver IMS Module, Head Lamp LH/RH (DBL), A/T Shift Lever IND.
AMP	25A	AMP (JBL/MOBIS)

## Instrument panel fuse panel

Fuse Name	Fuse rating	Protected Component
<b>HTD STRG</b>	15A	BCM
<b><sup>5</sup> MODULE</b>	10A	Front Console Switch, Tire Pressure Monitoring Module, Lane Keeping Assist Module, Smart Cruise Control Unit, Fuel Filler Door & Trunk Lid Switch, AEB Module, Head Lamp LH/RH (DBL), Rear Parking Assist Sensor LH/RH, Rear Parking Assist Sensor LH/RH (Center), Blind Spot Detection Radar LH/RH
<b>IG1</b>	25A	PCB Block (Fuse - VACUUM PUMP2/ TCU2/ ECU3/ ABS3)
<b>WASHER</b>	15A	Multifunction Switch (Wiper Low & Washer Switch)
<b>POWER OUTLET</b>	20A	Front Power Outlet
<b>A/BAG</b>	15A	SRS Control Module, Occupant Detection Sensor
<b>START</b>	7.5A	[W/O Smart Key & IMMO.] ICM Relay Box (Burglar Alarm Relay) [With Smart Key / IMMO.] Transaxle Range Switch, PCM (G4KJ/G4KH)
<b><sup>10</sup> MODULE</b>	10A	BCM



## Engine compartment main fuse panel

	Fuse Name	Fuse rating	Protected Component
MULTI FUSE (TYPE A)	IG2	30A	[Without Smart Key] (Start Relay), Ignition Switch, [With Smart Key] (Start Relay), PCB Block (IG2 Relay)
	<sup>3</sup> TCU	40A	[G4FJ - DCT] TCM
	BLOWER	40A	(Blower Relay)
	<sup>1</sup> ABS	40A	ESC Module
	REAR HEATED	50A	(Rear Heated Relay)
	<sup>1</sup> B+	50A	Smart Junction Block (IPS2 (4CH), IPS3 (4CH))
	<sup>1</sup> COOLING FAN	50A	[G4KH/G4FJ] (Cooling Fan Relay), [G4KJ] (Cooling Fan Relay)
	<sup>2</sup> COOLING FAN	60A	[G4KH/G4FJ] (Cooling Fan Relay)
MULTI FUSE (TYPE B)	<sup>2</sup> ABS	30A	ESC Module, Multipurpose Check Connector
	IG1	40A	[Without Smart Key] Ignition Switch, [With Smart Key] PCB Block (IG1/ACC Relay)
	<sup>4</sup> TCU	40A	[G4FJ - DCT] TCM
	<sup>3</sup> POWER OUTLET	40A	(Power Outlet Relay)
	<sup>2</sup> B+	50A	Smart Junction Block (IPS1 (4CH), IPS4 (4CH), IPS5 (4CH), IPS6 (2CH), IPS7 (1CH), Fuse - AMP)
	<sup>5</sup> B+	60A	PCB Block (Engine Control Relay, Fuse - TUC1, ECU1, HORN, AMS, WIPER)
	<sup>1</sup> B+	60A	Smart Junction Block (Power Window Relay, Fuse - SAFETY POWER WINDOW LH, P/SEAT PASS, SAFETY POWER WINDOW RH, P/SEAT DRV, MODULE1, P/WDW LH, P/WDW RH, TRUNK, S/HEATER RR, SUNROOF2, SUNROOF1)
	<sup>2</sup> MDPS	100A	MDPS Unit (Rack Type)

Engine compartment main fuse panel

	Fuse Name	Fuse rating	Protected Component
FUSE	<sup>3</sup> E-CVVT	20A	[G4KJ/G4KH] PCM
	<sup>2</sup> E-CVVT	20A	[G4KJ/G4KH] PCM
	FUEL PUMP	20A	(Fuel Pump Relay)
	H/LAMP HI	20A	[With HID] (Head Lamp High Relay)
	<sup>1</sup> VACUUM PUMP	20A	[G4KH/G4FJ] Vacuum Pump
	<sup>1</sup> E-CVVT	40A	[G4KJ/G4KH] (E-CVVT Relay)
	<sup>4</sup> B+	40A	Smart Junction Block (Leak Current Auto-cut Device Fuse - INTERIOR LAMP, MULTI MEDIA, MEMORY1, Fuse - DOOR LOCK, S/HEATER FR, BRAKE SWITCH, SMART KEY, MODULE10)
	A/CON	10A	A/C Control Module
	HEATED MIRROR	10A	ECM (G4FJ), A/C Control Module, Driver/Passenger Power Outside Mirror

## Engine compartment main fuse panel - PCB Block

	Fuse Name	Fuse rating	Protected Component
FUSE	<sup>2</sup> VACUUM PUMP	10A	[G4KH/G4FJ] Vacuum Pump, Vacuum Switch
	<sup>3</sup> ECU	10A	PCM/ECM
	<sup>1</sup> POWER OUTLET	20A	Front Cigarette Lighter & Power Outlet #2
	FUEL PUMP	20A	Fuel Pump Relay
	HORN	20A	Horn Relay, ICM Relay Box (Burglar Alarm Horn Relay)
	WIPER	30A	Front Wiper (Low) Relay, Front Wiper (High) Relay
	<sup>2</sup> TCU	15A	Transmission Range Switch, TCM (G4FJ-DCT)
	<sup>3</sup> ABS	10A	ESC Module
	<sup>2</sup> POWER OUTLET	20A	Rear Power Outlet
	B/UP LAMP	10A	Transmission Range Switch, PCM (G4KJ/G4KH-A/T), TCM (G4FJ-DCT), Electro Chromic Mirror, Rear Combination Lamp (IN) LH/RH
	<sup>1</sup> SENSOR	15A	Oxygen Sensor (Up/Down)
	<sup>2</sup> SENSOR	15A	Purge Control Solenoid Valve, Canister Close Valve, RCV Control Solenoid Valve, Fuel Pump Relay, E/R Junction Block (Cooling Fan High Relay, Fuel Pump Relay), [G4KJ/G4KH] Variable Intake Solenoid Valve, Oil Control Valve (Exhaust), [G4FJ] Oil Control Valve #1/#2 (Intake/Exhaust)
	<sup>1</sup> ECU	10A	PCM/ECM
	<sup>1</sup> TCU	10A	PCM (G4KJ/G4KH-A/T), TCM (G4FJ-DCT)
	<sup>1</sup> ECU	10A	PCM/ECM
	IGN COIL	20A	Ignition Coil #1/#2/#3/#4
INJECTOR	15A	Not Used	
AMS	10A	Battery Sensor	

### LIGHT BULBS

Consult an authorized HYUNDAI dealer to replace most vehicle light bulbs. It is difficult to replace vehicle light bulbs because other parts of the vehicle must be removed before you can get to the bulb. This is especially true for removing the headlamp assembly to get to the bulb(s).

Removing/installing the headlamp assembly can result in damage to the vehicle.

#### Information

After heavy driving, rain or washing, headlamp and trunk lenses could appear frosty. This condition is caused by the temperature difference between the lamp inside and the outside temperature. This is similar to the condensation on your windows inside your vehicle during the rain and doesn't indicate a problem with your vehicle. If the water leaks into the lamp bulb circuitry, have your vehicle checked by an authorized HYUNDAI dealer.

#### WARNING

- **Prior to replacing a lamp, depress the foot brake, move the shift lever into P (Park) apply the parking brake, place the ignition switch to the LOCK/OFF position, and take the key with you when leaving the vehicle to avoid sudden movement of the vehicle and to prevent possible electric shock.**
- **Be aware the bulbs may be hot and may burn your fingers.**

#### ***Absorbent (if equipped)***

This vehicle contains a dehumidifying dehumidifier inside the headlamp to mitigate the blurring of the headlamp due to moisture.

The desiccant is a consumable part and its performance may change depending on the usage time or environment.

If the inside of the headlamp continues to become cloudy due to moisture, we recommend that you consult an authorized HYUNDAI dealer.

The desiccant is a consumable part and cannot be guaranteed.

## Headlamp, Position Lamp, Turn Signal Lamp and Side Marker Light Bulb Replacement



- (1) Headlamp (Low)
- (2) Headlamp (High)
- (3) Turn signal lamp

- (4) Front side marker
- (5) Daytime running lamp/  
Position lamp

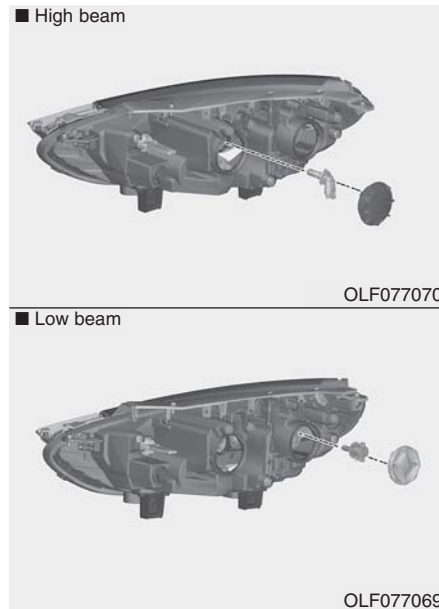


Headlamp (Halogen bulb)

### ⚠ WARNING

- Handle halogen bulbs with care. Halogen bulbs contain pressurized gas that will produce flying pieces of glass that could cause injuries if broken.
- Wear eye protection when changing a bulb. Allow the bulb to cool down before handling it.

- Always handle them carefully, and avoid scratches and abrasions. If the bulbs are lit, avoid contact with liquids.
- Never touch the glass with bare hands. Residual oil may cause the bulb to overheat and burst when lit.
- A bulb should be operated only when installed in a headlamp.
- If a bulb becomes damaged or cracked, replace it immediately and carefully dispose of it.



1. Open the hood.
2. Disconnect the negative battery cable.
3. Remove the headlamp bulb cover by turning it counterclockwise.
4. Disconnect the headlamp bulb socket-connector.

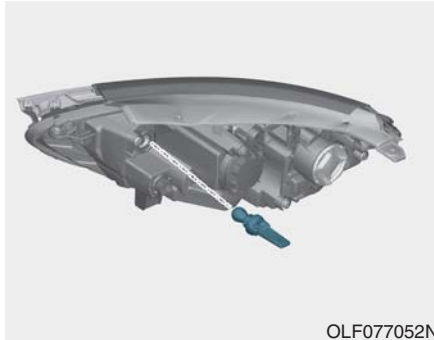
5. Unsnap the headlamp bulb retaining wire by pressing the end and pushing it upward.
6. Remove the bulb from the headlamp assembly.
7. Install a new headlamp bulb and snap the headlamp bulb retaining wire into position by aligning the wire with the groove on the bulb.
8. Connect the headlamp bulb socket-connector.
9. Install the headlamp bulb cover by turning it clockwise.

### **i** Information

**The headlamp aiming should be adjusted after an accident or after the headlamp assembly is reinstalled at an authorized HYUNDAI dealer.**

### **Headlamp (LED type)**

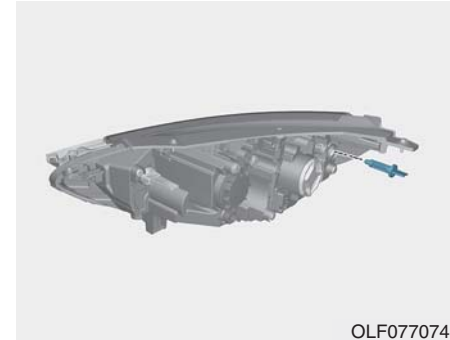
If the light bulb does not operate, we recommend that the system be checked by an authorized HYUNDAI dealer.



### Turn signal lamp

1. Open the hood.
2. Disconnect the negative battery cable.
3. Remove the socket from the assembly by turning the socket counterclockwise until the tabs on the socket align with the slots on the assembly.
4. Remove the bulb from the socket by pressing it in and rotating it counterclockwise until the tabs on the bulb align with the slots in the socket. Pull the bulb out of the socket.

5. Insert a new bulb by inserting it into the socket and rotating it until it locks into place.
6. Install the socket in the assembly by aligning the tabs on the socket with the slots in the assembly.
7. Push the socket into the assembly and turn the socket clockwise.



### Side marker

1. Open the hood.
2. Disconnect the negative battery cable.
3. Remove the socket from the assembly by turning the socket counterclockwise until the tabs on the socket align with the slots on the assembly.
4. Remove the bulb from the socket by pulling out the bulb.
5. Insert a new bulb.

### Daytime running lamp/ Position lamp

If the LED lamp does not operate, have the vehicle checked by an authorized HYUNDAI dealer.

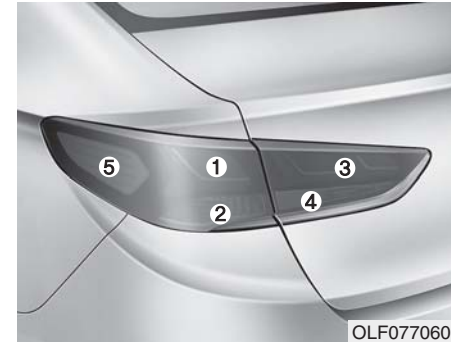
### Side Repeater Lamp Replacement



If the LED lamp does not operate, have the vehicle checked by an authorized HYUNDAI dealer.

### Rear Combination Light Bulb Replacement

#### *Type A*

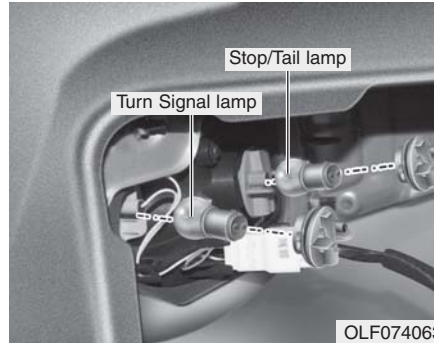


- (1) Stop/Tail lamp
- (2) Turn signal lamp
- (3) Tail lamp
- (4) Back-up lamp
- (5) Rear side marker (LED)  
(if equipped)



### Stop/Tail lamp and Turn signal lamp (Bulb type)

1. Open the trunk lid.
2. Remove the service cover by turning the lock counterclockwise and then pulling it out.



3. Remove the socket from the assembly by turning the socket counterclockwise until the tabs on the socket align with the slots on the assembly.
4. Remove the bulb from the socket by pressing it in and rotating it counterclockwise until the tabs on the bulb align with the slots in the socket. Pull the bulb out of the socket.
5. Insert a new bulb by inserting it into the socket and rotating it until it locks into place.

6. Install the socket in the assembly by aligning the tabs on the socket with the slots in the assembly. Push the socket into the assembly and turn the socket clockwise.

### Stop/Tail lamp and rear side marker (LED type)

If the LED lamp does not operate, have the vehicle checked by an authorized HYUNDAI dealer.



### Backup lamp and Tail lamp

1. Open the trunk.
2. Loosen the retaining screw of the trunk lid cover and then remove the cover.
3. Disconnect the connector and then remove the screws by turning the screws counterclockwise.



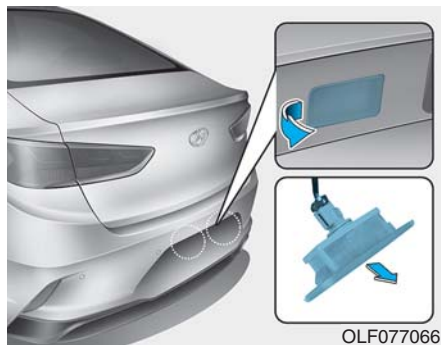
4. Remove the bulb by pulling it straight out.
5. Insert a new bulb by inserting it into the socket and rotating it until it locks into place.
6. Install the socket into the assembly by aligning the tabs on the socket with the slots in the assembly. Push the socket into the assembly and turn the socket clockwise.
7. Reinstall the trunk lid cover by pushing in the screw.

### High Mounted Stop Lamp



If the LED lamp does not operate, have the vehicle checked by an authorized HYUNDAI dealer.

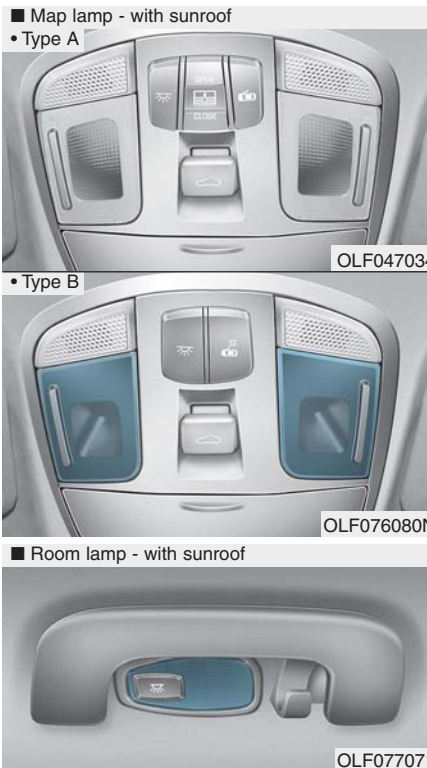
## License Plate Light Bulb Replacement



1. Loosen the lens retaining screws with a philips head screwdriver.
2. Remove the lens.
3. Remove the bulb by pulling it straight out.
4. Install a new bulb.
5. Reinstall the lens securely with the lens retaining screws.

## Interior Light Bulb Replacement

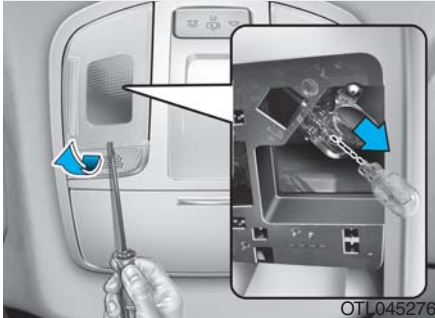
### Map lamp and Room lamp



If the LED lamp does not operate, have the vehicle checked by an authorized HYUNDAI dealer.

### Map lamp, Room lamp, Vanity mirror lamp and Luggage room lamp

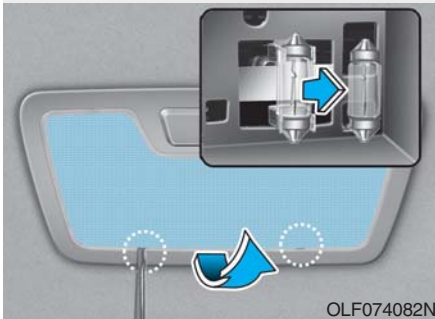
■ Map lamp - without sunroof



■ Vanity mirror lamp



■ Room lamp - without sunroof



■ Trunk room lamp



1. Using a flat-head screwdriver, gently pry the lens from the interior light housing.
2. Remove the bulb by pulling it straight out.
3. Install a new bulb in the socket.
4. Align the lens tabs with the interior light housing notches and snap the lens into place.

If the lamps do not operate, have the vehicle checked by an authorized HYUNDAI dealer.

#### **NOTICE**

**Use care not to dirty or damage lenses, lens tabs, and plastic housings.**

## APPEARANCE CARE

### Exterior Care

#### *Exterior general caution*

It is very important to follow the label directions when using any chemical cleaner or polish. Read all warning and caution statements that appear on the label.

#### *High-pressure washing*

- When using high-pressure washers, make sure to maintain sufficient distance from the vehicle. Insufficient clearance or excessive pressure can lead to component damage or water penetration.
- Do not spray the camera, sensors or its surrounding area directly with a high pressure washer. Shock applied from high pressure water may cause the device to not operate normally.
- Do not bring the nozzle tip close to boots (rubber or plastic covers) or connectors as they may be damaged if they come into contact with high pressure water.

#### *Finish maintenance*

##### *Washing*

To help protect your vehicle's finish from rust and deterioration, wash it thoroughly and frequently at least once a month with lukewarm or cold water.

If you use your vehicle for off-road driving, you should wash it after each off-road trip. Pay special attention to the removal of any accumulation of salt, dirt, mud, and other foreign materials. Make sure the drain holes in the lower edges of the doors and rocker panels are kept clear and clean.

Insects, tar, tree sap, bird droppings, industrial pollution and similar deposits can damage your vehicle's finish if not removed immediately.

Even prompt washing with plain water may not completely remove all these deposits. A mild soap, safe for use on painted surfaces, should be used.

After washing, rinse the vehicle thoroughly with lukewarm or cold water. Do not allow soap to dry on the finish.

#### WARNING

**After washing the vehicle, test the brakes while driving slowly to see if they have been affected by water before getting on the road. If braking performance is impaired, dry the brakes by applying them lightly while maintaining a slow forward speed.**

### CAUTION

- Do not use strong soap, chemical detergents or hot water, and do not wash the vehicle in direct sunlight or when the body of the vehicle is warm.
- Be careful when washing the side windows of your vehicle. Especially, with high-pressure water, water may leak through the windows and wet the interior.
- To prevent damage to the plastic parts, do not clean with chemical solvents or strong detergents.



### CAUTION

- Water washing in the engine compartment including high pressure water washing may cause the failure of electrical circuits located in the engine compartment.
- Never allow water or other liquids to come in contact with electrical/electronic components inside the vehicle as this may damage them.

### Waxing

A good coat of wax is a barrier between your paint and contaminants. Keeping a good coat of wax on your vehicle will help protect it.

Wax the vehicle when water will no longer bead on the paint.

Always wash and dry the vehicle before waxing. Use a good quality liquid or paste wax, and follow the manufacturer's instructions. Wax all metal trim to protect it and to maintain its luster.

Removing oil, tar, and similar materials with a spot remover will usually strip the wax from the finish. Be sure to re-wax these areas even if the rest of the vehicle does not yet need waxing.

 **CAUTION**

- Wiping dust or dirt off the body with a dry cloth will scratch the finish.
- Do not use steel wool, abrasive cleaners, or strong detergents containing highly alkaline or caustic agents on chrome-plated or anodized aluminum parts. This may result in damage to the protective coating and cause discoloration or paint deterioration.

***Finish damage repair***

Deep scratches or stone chips in the painted surface must be repaired promptly. Exposed metal will quickly rust and may develop into a major repair expense.

**NOTICE**

**If your vehicle is damaged and requires any metal repair or replacement, be sure the body shop applies anti-corrosion materials to the parts repaired or replaced.**

***Bright-metal maintenance***

- To remove road tar and insects, use a tar remover, not a scraper or other sharp object.
- To protect the surfaces of bright-metal parts from corrosion, apply a coating of wax or chrome preservative and rub to a high luster.
- During winter weather or in coastal areas, cover the bright metal parts with a heavier coating of wax or preservative. If necessary, coat the parts with non-corrosive petroleum jelly or other protective compound.

***Underbody maintenance***

Corrosive materials used for ice and snow removal and dust control may collect on the underbody. If these materials are not removed, accelerated rusting can occur on underbody parts such as the fuel lines, frame, floor pan and exhaust system, even though they have been treated with rust protection.

Thoroughly flush the vehicle underbody and wheel openings with lukewarm or cold water once a month, after off-road driving and at the end of each winter. Pay special attention to these areas because it is difficult to see all the mud and dirt. It will do more harm than good to wet down the road grime without removing it. The lower edges of doors, rocker panels, and frame members have drain holes that should not be allowed to clog with dirt; trapped water in these areas can cause rusting.

### **WARNING**

**After washing the vehicle, test the brakes while driving slowly to see if they have been affected by water. If braking performance is impaired, dry the brakes by applying them lightly while maintaining a slow forward speed.**

### **Aluminum wheel maintenance**

The aluminum wheels are coated with a clear protective finish.

### **CAUTION**

- **Do not use abrasive cleaner, polishing compound, solvent, or wire brushes on aluminum wheels.**
- **Clean the wheel when it has cooled.**
- **Use only a mild soap or neutral detergent, and rinse thoroughly with water. Also, clean the wheels after driving on salted roads.**
- **Do not wash the wheels with high-speed car wash brushes.**
- **Do not use any cleaners containing acid or alkaline detergents.**

### **Corrosion protection**

#### **Protecting your vehicle from corrosion**

By using the most advanced design and construction practices to combat corrosion, HYUNDAI produces cars of the highest quality. However, this is only part of the job. To achieve the long-term corrosion resistance your vehicle can deliver, the owner's cooperation and assistance is also required.

#### **Common causes of corrosion**

The most common causes of corrosion on your vehicle are:

- Road salt, dirt and moisture that is allowed to accumulate underneath the vehicle.
- Removal of paint or protective coatings by stones, gravel, abrasion or minor scrapes and dents which leave unprotected metal exposed to corrosion.

### High-corrosion areas

If you live in an area where your vehicle is regularly exposed to corrosive materials, corrosion protection is particularly important. Some of the common causes of accelerated corrosion are road salts, dust control chemicals, ocean air and industrial pollution.

### Moisture breeds corrosion

Moisture creates the conditions in which corrosion is most likely to occur. For example, corrosion is accelerated by high humidity, particularly when temperatures are just above freezing. In such conditions, the corrosive material is kept in contact with the car surfaces by moisture that is slow to evaporate.

Mud is particularly corrosive because it is slow to dry and holds moisture in contact with the vehicle. Although the mud appears to be dry, it can still retain the moisture and promote corrosion.

High temperatures can also accelerate corrosion of parts that are not properly ventilated so the moisture can be dispersed. For all these reasons, it is particularly important to keep your vehicle clean and free of mud or accumulations of other materials. This applies not only to the visible surfaces but particularly to the underside of the vehicle.

### To help prevent corrosion

#### *Keep your car clean*

The best way to prevent corrosion is to keep your vehicle clean and free of corrosive materials. Attention to the underside of the vehicle is particularly important.

- If you live in a high-corrosion area — where road salts are used, near the ocean, areas with industrial pollution, acid rain, etc.—, you should take extra care to prevent corrosion. In winter, hose off the underside of your vehicle at least once a month and be sure to clean the underside thoroughly when winter is over.

- When cleaning underneath the vehicle, pay particular attention to the components under the fenders and other areas that are hidden from view. Do a thorough job; just dampening the accumulated mud rather than washing it away will accelerate corrosion rather than prevent it. Water under high pressure and steam are particularly effective in removing accumulated mud and corrosive materials.
- When cleaning lower door panels, rocker panels and frame members, be sure that drain holes are kept open so that moisture can escape and not be trapped inside to accelerate corrosion.

### *Keep your garage dry*

Don't park your car in a damp, poorly ventilated garage. This creates a favorable environment for corrosion. This is particularly true if you wash your vehicle in the garage or drive it into the garage when it is still wet or covered with snow, ice or mud. Even a heated garage can contribute to corrosion unless it is well ventilated so moisture is dispersed.

### *Keep paint and trim in good condition*

Scratches or chips in the finish should be covered with "touch-up" paint as soon as possible to reduce the possibility of corrosion. If bare metal is showing through, the attention of a qualified body and paint shop is recommended.

Bird droppings are highly corrosive and may damage painted surfaces in just a few hours. Always remove bird droppings as soon as possible.

## Interior Care

### ***Interior general precautions***

Prevent caustic solutions such as perfume and cosmetic oil, from contacting the interior parts because they may cause damage or discoloration. If they do contact the interior parts, wipe them off immediately. See the instructions for the proper way to clean vinyl.



### **CAUTION**

- **Never allow water or other liquids to come in contact with electrical/electronic components inside the vehicle as this may damage them.**
- **When cleaning leather products (steering wheel, seats etc.), use neutral detergents or low alcohol content solutions. If you use high alcohol content solutions or acid/alkaline detergents, the color of the leather may fade or the surface may get stripped off.**

## ***Cleaning the upholstery and interior trim***

### **Vinyl (if equipped)**

Remove dust and loose dirt from vinyl with a whisk broom or vacuum cleaner. Clean vinyl surfaces with a vinyl cleaner.

### **Fabric (if equipped)**

Remove dust and loose dirt from fabric with a whisk broom or vacuum cleaner. Clean with a mild soap solution recommended for upholstery or carpets. Remove fresh spots immediately with a fabric spot cleaner. If fresh spots do not receive immediate attention, the fabric can be stained and its color can be affected. Also, its fire-resistant properties can be reduced if the material is not properly maintained.

#### **CAUTION**

**Using anything but recommended cleaners and procedures may affect the fabric's appearance and fire-resistant properties.**

### **Leather (if equipped)**

#### **• Feature of Seat Leather**

- Leather is made from the outer skin of an animal, which goes through a special process to be available for us. Since it is a natural object, each part differs in thickness or density. Wrinkles may appear as a natural result of stretching and shrinking depending on the temperature and humidity.
- The seat is made of stretchable fabric to improve comfort.
- The parts contacting the body are curved and the side supporting area is high which provides driving comfort and stability.
- Wrinkles may appear naturally from usage. It is not a fault of the product.

#### **CAUTION**

- **Wrinkles or abrasions which appear naturally from usage are not covered by warranty.**
- **Belts with metallic accessories, zippers or keys inside the back pocket may damage the seat fabric.**
- **Make sure not to wet the seat. It may change the nature of natural leather.**
- **Jeans or clothes which could bleach may contaminate the surface of the seat covering fabric.**

- Caring for the leather seats
  - Vacuum the seat periodically to remove dust and sand on the seat. It will prevent abrasion or damage of the leather and maintain its quality.
  - Wipe the natural leather seat cover often with dry or soft cloth.
  - Use of proper leather protective may prevent abrasion of the cover and helps maintain the color. Be sure to read the instructions and consult a specialist when using leather coating or protective agents.
  - Light colored (beige, cream beige) leather is easily contaminated and the stain is noticeable. Clean the seats frequently.
  - Avoid wiping with wet cloth. It may cause the surface to crack.
- Cleaning the leather seats
  - Remove all contaminations instantly. Refer to instructions below for removal of each contaminant.
  - Cosmetic products (sunscreen, foundation, etc.)  
Apply cleansing cream on a cloth and wipe the contaminated spot. Wipe off the cream with a wet cloth and remove water with a dry cloth.
  - Beverages (coffee, soft drink, etc.)  
Apply a small amount of neutral detergent and wipe until contaminations do not smear.
  - Oil  
Remove oil instantly with absorbable cloth and wipe with stain remover used only for natural leather.
  - Chewing gum  
Harden the gum with ice and remove gradually.

### ***Cleaning the seat belt webbing***

Clean the belt webbing with any mild soap solution recommended for cleaning upholstery or carpet. Follow the instructions provided with the soap. Do not bleach or re-dye the webbing because this may weaken the seat belt.

### ***Cleaning the interior window glass***

If the interior glass surfaces of the vehicle become fogged (that is, covered with an oily, greasy or waxy film), they should be cleaned with glass cleaner. Follow the directions on the glass cleaner container.

#### **CAUTION**

**Do not scrape or scratch the inside of the rear window. This may result in damage to the rear window defroster grid.**

## EMISSION CONTROL SYSTEM

The emission control system of your vehicle is covered by a written limited warranty. Please see the warranty information contained in the Service Passport in your vehicle.

Your vehicle is equipped with an emission control system to meet all applicable emission regulations. There are three emission control systems, as follows.

- (1) Crankcase emission control system
- (2) Evaporative emission control system
- (3) Exhaust emission control system

In order to assure the proper function of the emission control systems, it is recommended that you have your vehicle inspected and maintained by an authorized HYUNDAI dealer in accordance with the maintenance schedule in this manual.

### CAUTION

**For the Inspection and Maintenance Test (With Electronic Stability Control (ESC) system)**

- **To prevent the vehicle from misfiring during dynamometer testing, turn the Electronic Stability Control (ESC) system off by pressing the ESC switch (ESC OFF light illuminated).**
- **After dynamometer testing is completed, turn the ESC system back on by pressing the ESC switch again.**

### 1. Crankcase Emission Control System

The positive crankcase ventilation system is employed to prevent air pollution caused by blow-by gases being emitted from the crankcase. This system supplies fresh filtered air to the crankcase through the air intake hose. Inside the crankcase, the fresh air mixes with blow-by gases, which then pass through the PCV valve into the induction system.

### 2. Evaporative Emission Control System Including Onboard Refueling Vapor Recovery (ORVR)

The Evaporative Emission Control System is designed to prevent fuel vapors from escaping into the atmosphere. The ORVR system is designed to allow the vapors from the fuel tank to be loaded into a canister while refueling at the gas station, preventing the escape of fuel vapors into the atmosphere.

### **Canister**

Fuel vapors generated inside the fuel tank are absorbed and stored in the onboard canister. When the engine is running, the fuel vapors absorbed in the canister are drawn into the surge tank through the purge control solenoid valve.

### **Purge Control Solenoid Valve (PCSV)**

The purge control solenoid valve is controlled by the Engine Control Module (ECM); when the engine coolant temperature is low during idling, the PCSV closes so that evaporated fuel is not taken into the engine. After the engine warms-up during ordinary driving, the PCSV opens to introduce evaporated fuel to the engine.

### **3. Exhaust Emission Control System**

The Exhaust Emission Control System is a highly effective system which controls exhaust emissions while maintaining good vehicle performance.

When the engine starts or fails to start, excessive attempts to restart the engine may cause damage to the emission system.

#### **Vehicle modifications**

- This vehicle should not be modified. Modification of your vehicle could affect its performance, safety or durability and may even violate governmental safety and emissions regulations.

In addition, damage or performance problems resulting from any modification may not be covered under warranty.

- If you use unauthorized electronic devices, it may cause the vehicle to operate abnormally, wire damage, battery discharge and fire. For your safety, do not use unauthorized electronic devices.

### **Engine exhaust (carbon monoxide) precautions**

- Carbon monoxide can be present with other exhaust fumes. If you smell exhaust fumes of any kind in your vehicle, drive with all the windows fully open. Have your vehicle checked and repaired immediately.

#### **⚠ WARNING**

**Engine exhaust gases contain carbon monoxide (CO). Though colorless and odorless, it is dangerous and could be lethal if inhaled. Follow the instructions on this page to avoid CO poisoning.**

- Do not operate the engine in confined or closed areas (such as garages) any more than what is necessary to move the vehicle in or out of the area.
- When the vehicle is stopped in an open area for more than a short time with the engine running, adjust the ventilation system (as needed) to draw outside air into the vehicle.
- Never sit in a parked or stopped vehicle for any extended time with the engine running.
- When the engine stalls or fails to start, excessive attempts to restart the engine may cause damage to the emission control system.

### ***Operating precautions for catalytic converters (if equipped)***

#### **! WARNING**

**The exhaust system and catalytic converter are very hot during and immediately after the engine has been running. To avoid SERIOUS INJURY or DEATH :**

- **Do not park, idle, or drive the vehicle over or near flammable objects, such as grass, vegetation, paper, leaves, etc. A hot exhaust system can ignite flammable items under your vehicle.**
- **Keep away from the exhaust system and catalytic converter or you may get burned.**

**Also, Do not remove the heat sink around the exhaust system, do not seal the bottom of the vehicle, and do not coat the vehicle for corrosion control. It may present a fire risk under certain conditions.**

Your vehicle is equipped with a catalytic converter emission control device.

To prevent damage to the catalytic converter and to your vehicle, take the following precautions:

 **CAUTION**

- Use only **UNLEADED FUEL** for gasoline engines.
- Do not operate the vehicle when there are signs of engine malfunction, such as misfire or a noticeable loss of performance.
- Do not misuse or abuse the engine. Examples of misuse are coasting with the engine off and descending steep grades in gear with the engine off.
- Do not operate the engine at high idle speed for extended periods (5 minutes or more).

(Continued)

(Continued)

- Do not modify or tamper with any part of the engine or emission control system. All inspections and adjustments must be made by an authorized HYUNDAI dealer.
- Avoid driving with an extremely low fuel level. Running out of fuel could cause the engine to misfire, damaging the catalytic converter.